Rebuilding the Culture of Place:
A Study in the Potentials of Neighborhood Transit Oriented Development

Erin Malia Marquez

May 2013

Submitted towards the fulfillment of the requirements for the Doctor of Architecture degree.

School of Architecture
The University of Hawai'i at Mānoa

Doctorate Project Committee
Clark Llewellyn, Chairperson
Priyam Das
Ty Cullen

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We certify that we have read this Doctorate Project and that, in our opinion, it is satisfactory in scope and quality in fulfillment as a Doctorate Project for the degree of Doctor of Architecture in the School of Architecture, University of Hawai'i at Mānoa.

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ABSTRACT

We are embarking on projects that will change the future of O'ahu. Among them include the mass transit project that will not directly serve many communities across the island and will also affect the character and experience of communities. When looking at transit oriented development, the focus is typically on a small radius within the station area. It fails to look into providing a seamless connection between other community districts at the neighborhood level. To remedy this detachment, the goal of this project is to create a subsystem that will identify transit corridors and the needs/desires of a community in order to create a dynamic system. The project will also identify the qualities of a neighborhood, by reinforcing that the fabric of a community hasn't been lost, but rather, built upon. There must be a better understanding of what transit-oriented development (TOD) projects can and should accomplish, how goals must be aligned, and what the decision-making and development process entails. By using Kunia as an example, this model could help other communities within the district facing the same circumstances.

1

INTRODUCTION

1.1 PROJECT STATEMENT & GOALS
1.2 RESEARCH METHODOLOGIES

1.1 PROJECT STATEMENT & GOALS

Honolulu's Rail Transit project will change the urban landscape and the way we live. It's the largest public works project in Honolulu's history and broke ground in 2009. The project was put to a vote during the 2008 election resulting in 52% in favor of rail. Concerns have been on budget and politics, but little concern has been placed on how transit oriented development will affect the livability of Honolulu.

Transit is more than just mitigating traffic congestion. It has the potential to provide access to opportunities that aren't easily attained by many who live far away from the urban center we call Honolulu. Convenient access to employment, education, retail and recreation for thousands of residents will transform our city, culturally, economically, socially, and geographically. Integration of transportation, land-use, and development is critical in creating an efficient network for residents.

Source: www.thetransitpolitic.com (Accessed on 2/12/13).

In the next 25 years, there will be over 90,000 new homes added to the Ewa region, which is mostly driven by market forces. Preventing additional sprawl on agricultural land is vital for the ecological and agricultural sustainability of O'ahu. Transit will influence where many of these units future locations will be.

The overall goal of the project is to analyze and better understand how transit will affect communities that are not within the radius of the main transit line. This project will also focus on the introduction of a form of infrastructure that suits Kunia's 'culture of place' and how the benefits of such infrastructure can be maximized through the design of a sub-station (or feeder) located within the neighborhood. The sub-station would create much more pedestrian and vehicular traffic, as well as offer new opportunities for development and growth. The research and case studies will attempt to analyze the different factors that contribute to the success of transit oriented development.

The goal of the new subsystem design and its surroundings will aim to act as a catalyst to revitalize an existing community and promote new developments in the area. The sub-station should not only promote use of the rail line but also other modes of transportation other than the automobile, such as walking or bicycling. By promoting this sustainable lifestyle, it will help to enhance the experience within the neighborhood. An increase in pedestrian activity and increase in retail and business opportunities can have a symbiotic relationship that has been sparked by the introduction of a new transit line. To understand the different relationships that are created in and around a transit line, several different case studies will be analyzed. The different case studies examined in the research will play an important role in developing background knowledge of

the existing body of knowledge in the field. These real life examples will provide the opportunity to examine how they function in the context of their community.

A new substation has the opportunity to revitalize its surrounding community by establishing new urban centers that are not within radius of the transit spine, and will help promote ridership of the rail.

1.2 RESEARCH METHODOLOGIES

The research will focus on two major areas of design that play an important role in the development of the project. The first area that is addressed is the issue of the 'culture of place' within a neighborhood. Creating a substation that is not directly serviced by the main transit line will be a main focus of this project. The research will help to develop a basic understanding of the relationship of the built environment, the culture of the environment, and its transit connections. The focus will be on the successful developments around a transit station. Research will focus on what defines a successful Transit-Oriented Development.

Then these ideas will be analyzed and extracted to form a series of principles that will help to guide the direction of the project. The next section of the project examines six different transit stations. Three of the case studies look at Transit-Oriented Developments to understand a broader scale at the neighborhood plan. The next three case studies analyze new proposed designs for transit stations and analyze the design in relationship to the immediate surroundings. These case studies will help to understand the current design of transit stations and the developments around them. The design portion of the document will be centered around the Park and Ride located in Kunia. This site will be analyzed for the existing conditions and designed with the following in mind:

1. Connections to the Waipahu transit line
2. Kunia history and the plantation days
3. Connections to neighboring areas

The design will first investigate the larger area plan focusing mainly on the larger scale which shows the connections between the Park and Ride as well as the Waipahu transit station. This will help to understand the context in which the station fits into the larger community. The next phase of design will analyze the individual site. All design work will be focused on promoting multi-modal traffic, which includes walkable neighborhoods, bicycling and also integrating the substation into the neighborhood.

A transit station can have a large effect on multiple scales in the community. This research attempts to define what makes a design successful on a variety of scales. By looking at a range of scales it gives the design a holistic approach to creating a successful design. This information will help to provide a basic understanding of designing a substation that is not directly served by the transit line.

II

THE CULTURE OF PLACE

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2.1 DEFINING THE CULTURE OF PLACE

Our communities are becoming more populous but not worth inhabiting.[1] In an era when cities, towns and communities are changing rapidly, public spaces are the key to reviving community culture. Our connections to neighbors and fellow citizens, the glue of a democratic society, are being undone by streets that favor cars at the expense of pedestrians, public institutions that detract from the vitality of surrounding districts, and commercial developments that stimulate consumerism but not social interaction.[2] If people can't come together in public spaces, if streets have no room for neighborly conversation or casual sidewalk contacts, then what future is there for a shared community or the idea of a 'culture of place'?

We can create a 'culture of place', and public spaces are perhaps the best platform in which to do so. People still want to come together as a community in their shared spaces. Our parks, streets, squares, and public buildings can still foster civic ideals like democratic participation and cultural expression. It's simply a matter of enabling people to use these places as they are naturally inclined. But first, if the desire for human contact is to express itself freely, local governments must adopt a new approach to designing and managing the built environment.

The year 2006 marked the tipping of the scales between the planet's urban and rural populations. At some point in the very near future, more people

[1] Plant, 11.

[2] Plant, 24.

will be living in cities and suburbs than in the countryside for the first time in history.

North American communities are not as far removed from global trends as we may imagine. Our rural populations continue to decline while urban and suburban areas multiply in size. All the while, the psychological distance between us keeps shrinking. With these shifts come new challenges to human environments. How have our cities responded? In the words of Toronto Poet Laureate Pier Giorgio Di Cicco:

Those of us who have been on the planet for a while know that the instinct for human encounter is under siege… The global citizen… has responded with boundary laws, privacy regulations, and gated communities. A civic distrust has permeated our cities…

If we don't reverse this civic distrust, then soon our cities and towns will be more populous, but not worth inhabiting. Though closer together by some measures, we are suffering from what sociologist Robert Putnam calls the loss of "social capital." Our connections to neighbors and fellow citizens, the glue of a democratic society, are being undone by streets that favor cars at the expense of pedestrians, public institutions that detract from the vitality of surrounding districts, and commercial developments that stimulate consumerism but not social interaction. If people can't come together in public spaces, if streets have no room for neighborly conversation or casual sidewalk contacts (what Jane Jacobs called "the small change from which a city's wealth of public life may grow"), then what future is there for a shared civic culture amid the rapid demographic changes affecting today's cities?

The good news is that “the instinct for human encounter” has not left us, it has just been suppressed. We can create a culture of civic engagement, and public spaces are perhaps the best forum in which to do so. People still want to come together as a community in their shared spaces. Our parks, streets, squares, and public buildings can still foster civic ideals like democratic participation and cultural expression. It’s simply a matter of enabling people to use these places as they are naturally inclined. But first, if the desire for human contact is to express itself freely, local governments must adopt a new approach to designing and managing the built environment.

In Mississauga, Ontario, the Living Arts Centre is one of many institutions that have the potential to bring more life into downtown's public spaces, if it becomes a destination, and not just a facility.

Mississauga, Ontario is one of the pioneering cities exploring how to revive civic culture in public spaces. With nearly 700,000 residents, Mississauga has rapidly grown to become Canada’s sixth largest city, yet it has struggled to escape the shadow of neighboring Toronto and establish its own identity. The downtown area possesses great potential, with the City Hall, Central Library, and

Living Arts Centre all located closely together. Until quite recently, however, the public spaces around these buildings lacked street life, reinforcing the attitude that Mississauga is a sterile suburb with a shopping mall at its heart. Today that perception is beginning to change, as the City makes a concerted effort to create a genuine, cohesive civic center full of public activity.

"The City is looking to local residents, businesses and key stakeholders to help shape Mississauga's City Centre into a vibrant downtown area," said longtime Mayor Hazel McCallion in a recent interview. "The City plans to develop a City Centre that will be the major focal point for commercial activity, employment opportunities, cultural, civic, recreational facilities and residential development."

Making this vision a reality depends on using the right process. When Mississauga began their revitalization effort, the first thing they did was train over 200 city staff, including the City Manager and all the Commissioners, in the intricacies of what makes a great place. Why? Because when your goal is to create a place, you do everything differently. Normally, for instance, traffic engineers concentrate on moving vehicles, and park managers focus on maintenance, landscaping, or security. But if making a place that attracts people and gives them joy becomes the number one priority, then new questions arise. What uses would draw people to this place? How can you design the street and manage the park to support this activity? Possibilities emerge for increased collaboration between city planning professionals. Using public spaces as venues for markets or performances, for instance, may mean that departments of economic development or cultural affairs also become involved. In fact, creating a place requires more skills than any one discipline can possibly provide.

Going hand in hand with the wisdom of using a multi-disciplinary, place-based strategy is the need for a bottom-up, community-based approach. Put simply, if you want to create places that work well for the people who use them every day, then civic engagement must be built into the planning process itself. That means giving the local community a pivotal decision-making role, using their expertise and aspirations to guide the evolution of their public spaces. The result is a public realm that not only incorporates local character and citizens' wisdom, but also instills a sense of civic pride and stewardship in the community. People feel more connected to a place if they or someone they know had a hand in shaping it. Even without a direct link, just knowing that fellow citizens played a role can make a huge difference in people's perceptions.

In a diverse city like Mississauga, where 47 percent of the population was born outside Canada, fostering community involvement from the outset is especially important, requiring thoroughness and sensitivity. Like an increasing number of cities, Mississauga is home to many distinct ethnic communities, each with distinct hopes and desires for their public spaces. Including a broad representation of stakeholders in the planning process ensures that the uses and activities within each place are geared to multiple audiences. The public realm becomes more eclectic and democratic, acting as a forum for cross-cultural communication.

After Mississauga's city staff completed the training, they worked with groups of local citizens to evaluate the public spaces in the City Centre and suggest improvements. Ideas ranged from physical changes, like making streets and sidewalks more pedestrian-friendly, to new events, like ethnic festivals and markets. The benefits of the community-based process were clearly apparent in

the ingenuity and enthusiasm of the participants. Their ideas are now the template for infrastructure enhancements and a new program of activities for the City Centre.

A crowd gathers for a concert, one of many events held during "My Mississauga," a series of events held last summer.

This approach to city planning necessitates a new way of organizing government. It not only involves getting diverse stakeholders to the table to talk about change, it also depends on continuous communication between all parties–both during implementation and afterward, when management is of high importance. “We need to keep asking the community what they like, what they don’t,” says Gil Peñalosa, leading staff advocate for Placemaking in Mississauga. “It always requires political support, staff support, and especially, community support.” Mississauga has risen to the occasion by creating a new initiative called the “City for the 21st Century.” The director of this division, Bruce Carr, is currently managing the Placemaking improvements to the City Centre as outlined by the community. This summer the Central Library and City Hall plazas were actively programmed six days a week, hosting an eclectic mix of concerts, ethnic festivals, markets, sports, and other activity.

Another way the City has adjusted is by treating public spaces as outdoor community centers. Mississauga already operates a network of indoor community centers with budgets for management and programming. They are beginning to operate public spaces the same way, as places that need continual management to succeed. In kicking off this summer's festivities, City Manager Janice Baker announced, "Today is an exciting day for the City of Mississauga. City Centre is about to be transformed into a unique 'outdoor community center' where we can all enjoy live concerts, food, activities, and special events." The City's 2007 draft budget sets aside funds for a full-time city center management staff, the first time the city has created a position to manage an outdoor space. If successful, the model could be replicated in other public spaces, including Mississauga's waterfront park system along Lake Ontario and the Credit River.

Mississauga's commitment to Placemaking bodes well for the future of civic engagement — there and elsewhere. By creating successful public spaces with real community participation, they have taken a very forward-looking and courageous step, one that we'll see replicated in other cities before too long.

2.2 DEFINING COMMUNITY CULTURE

The Importance of Culture within a Community

Although probably taken for granted, community culture exists all around us, whether it be the traditions of school, family, community, and the region where you live. Community culture, sometimes called "folklore" or "folklife," is the living expression of culture in everyday life—anyone's culture—learned and passed on informally from person to person. It must be alive and current to be folklife, though it may have existed over long stretches of time. Everywhere, people take the experiences of their lives and transform them into song, story, decoration, ritual, and celebration—examples of what folklorists call "expressive

culture." When such expressions communicate the shared experiences, thoughts, and feelings of a group, and are passed on to others, they become traditions.

Within the architectural field, culture is used as a reference; it defines the characteristics of place. In architectural education, we are taught the differences between cultures as they relate to the built environment, but we are not traditionally taught how culture relates to the process of how architecture is created.

Why Public Spaces Fail[3]

Project for Public Spaces

Founded in 1975 the Project for Public Spaces (PPS) was founded as a tool for people to create successful public spaces. Their research and designs were inspired by the work of William Whyte. Since its founding PPS has completed 2,500 projects in 40 countries. The article "Why Public Spaces Fail" was written by PPS as one of many resources that they put out. This article gives insight into specific elements of a public place that can make it unsuccessful. The article can also serve as a resource to understand how one can manipulate the space to make it more successful. The article identifies eight different elements that can contribute to creating an unsuccessful public space;

> ***"Lack of places to sit"*** - Seating is one of the most important elements in the public realm and the lack of it can serve as a deterrent for users. A variety of seating options and location in relation to other activities occurring in the area can also play a role in the success of the seating.

[3] Project for Public Spaces. "Why Public Spaces Fail" http://www.pps.org/failedplacefeat/, Accessed 12/17/12.

"Lack of gathering points" – Gathering spaces in the community are created by providing things that people want or need. These elements could include things such as food, playgrounds or seating.[4]

"Poor entrances and visually inaccessible spaces" - For people to use a public space they must be able to see the space and get to the space. Open entrances that allow people passing by to see people using the space will attract more visitors than those that are cut off from the street.

"Paths that don't go where people want to go" - The design of the pathway is important to the use and success of it. A successful path can pull pedestrians down it and create spaces for them to stop and enjoy their surroundings.

"Domination of a space by vehicles" - It is important for the area to accommodate the pedestrian by creating a walking friendly environment. A place should provide sidewalks and crosswalks at a comfortable scale to create a pleasant walking experience that does not cause fear of the automobile.

"Blank walls or dead zones around the edges of a place" - Blank walls or dead zones around an area have no connection to the space and do not contribute to the activity in the area. The area around the space is an important element in its success and should provide activities and a connection to the building.

[4] Project for Public Spaces. "Why Public Spaces Fail" http://www.pps.org/failedplacefeat/, Accessed 12/17/12.

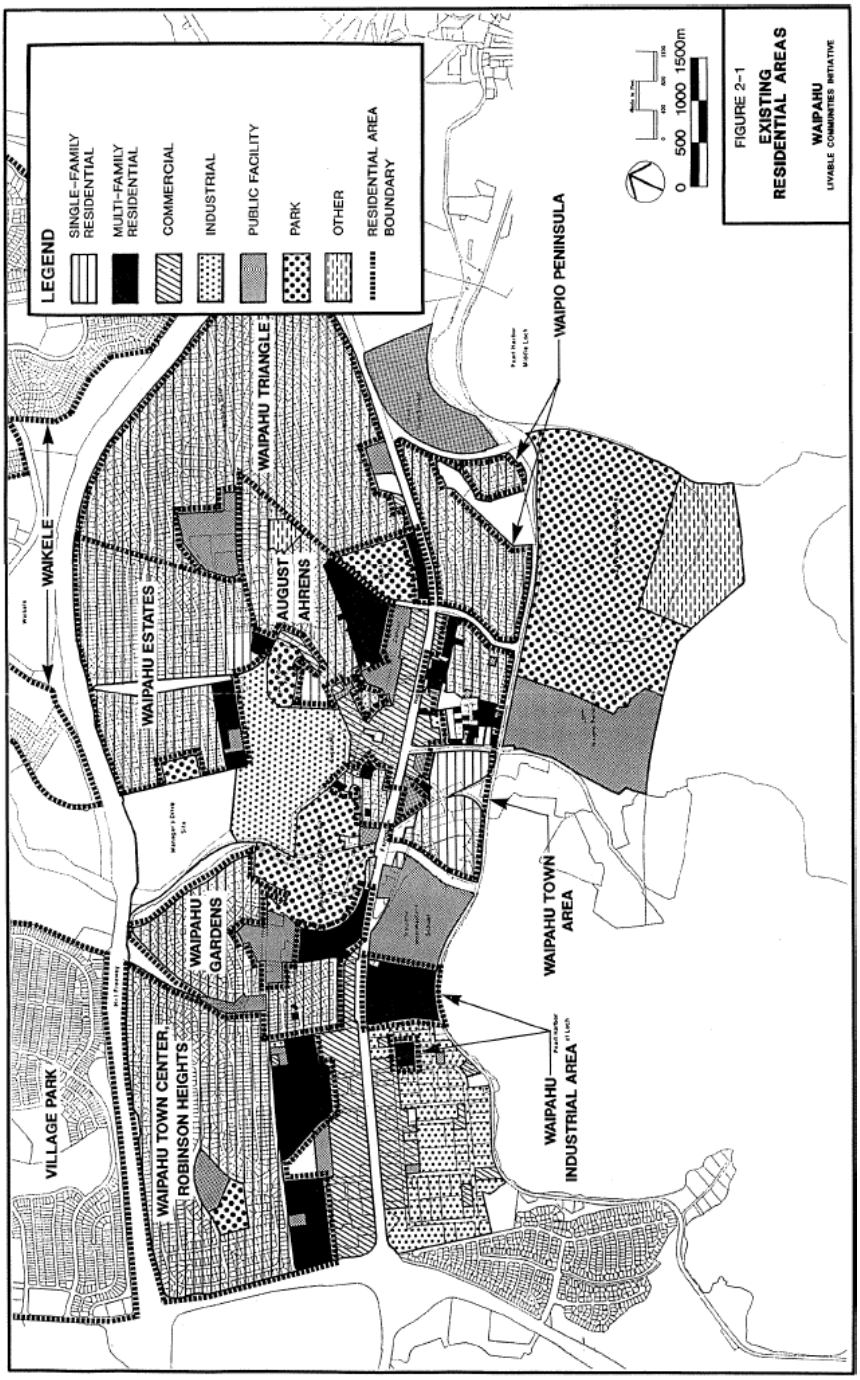
"Inconveniently located transit stops" - Transit stops that are located in places where no one uses makes it inconvenient and doesn't contribute to the community. When located in a busy area with lots of activity it can add to the environment around the stop as well as increase ridership of the transit.

2.3 KUNIA, O'AHU

In communities such as Kunia, the daily bump and grind of waking up early and dealing with grid lock traffic is the cycle of life that many have become accustomed to. Located in Central O'ahu Waipahu, Kunia is home to many agricultural lands, one of which was a former sugar plantation town. Kunia is also located in the district of Waipahu. Waipahu is a name of an artesian spring. In Hawaiian, Waipahu is derived from *wai*, meaning water, and *pahū*, meaning "burst or gush forth". The early Native Hawaiians took pleasure in the cool and clear water gushing from the ground and named this spring Waipahu. Before the Western civilization set foot in Hawaii, the Hawaiians considered Waipahu to be the capital of Oahu. Royalty in the Kingdom of Hawaii would often gather and enjoy the fresh water spring from the spring Waipahu. Waipahu is a major residential community which is comprised mostly of middle income single-family residences and lower income apartment areas.

Waipahu's rich history was strongly influenced by the establishment of the O'ahu Sugar Company in 1897, a sugar plantation which flourished because of the vast expanses of land, abundant water and the OR&L Railroad which linked the town to Honolulu Harbor.[5]

[5] The Closing of Sugar Plantations: Interviews with Families of Hamakua and Kau, Hawai'i. (Honolulu: Center for Oral History-Social Science Research Institute, 1997.), 5.



Source: Waipahu Livable Communties Plan, 1997.

Table 2-1
Journey To Work - Mode of Travel
Waipahu and Surrounding Residential Areas

	Census Tract	Auto	Bus	Walk	Other	At Home	Workers 16+yrs
Waipahu Triangle	87.01	85%	10%	1%	2%	3%	3,372
Waipahu Town	87.02	80%	12%	4%	1%	3%	1,827
Waipahu Industrial	87.98	74%	12%	8%	2%	3%	1,299
Waipahu Estates	88.00	84%	13%	0%	1%	2%	2,960
Robinson Heights	89.01	87%	8%	3%	0%	1%	3,849
August Ahrens	89.12	90%	9%	1%	1%	0%	1,093
Waikele/Waipio	89.11	94%	3%	1%	1%	1%	7,079
Village Park/Kunia	89.05	94%	4%	1%	1%	0%	4,224
Average/Total		**88%**	**8%**	**2%**	**1%**	**1%**	**25,703**

Source: U.S. Bureau of Census, 1990

Table 2-2
Mode of Transportation for Specific Activities
Central Oahu Residents

	Drive	Bus	Ride w/ Someone	Walk	No Usual Way
Grocery Shopping	84.6%	0.9%	9.5%	0.5%	4.6%
Shop for Clothes or Household Goods	87.4%	3.5%	7.3%	0.3%	1.6%
Doctor or Dentist	84.7%	3.5%	6.7%	1.0%	4.2%
Eat Out	85.2%	0.5%	9.1%	0.0%	5.2%
Entertainment	84.4%	0.7%	11.9%	0.0%	3.1%

Source: LOTMA, 1991

Table 2-3
Modes of Travel
Transportation Survey for Waipahu

	Drive	Bus	Bike	Walk	Multi-Modal	Retired /NR
Travel to Work	62%	10%	0%	2%	5%	20%
Travel within Waipahu	69%	9%	2%	8%	12%	2%
Employees of Waipahu Businesses	91%	5%	2%	2%	1%	–

Source: Wilson Okamoto & Associates, Inc., 1997

Source: Waipahu Livable Communties Plan, 1997. Research study conducted by Wilson Okamoto & Associates in 1997.

Table 2-4
Inclination for Alternative Travel Modes
Waipahu Transportation Survey

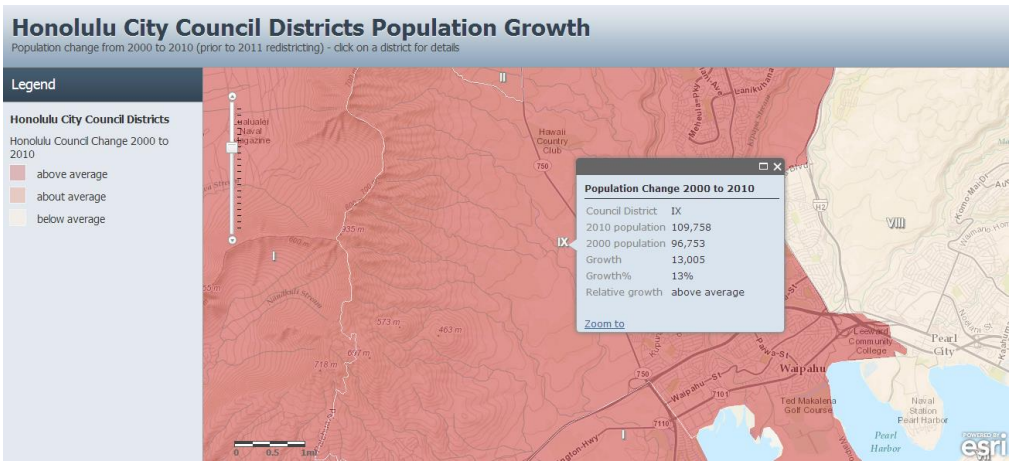
	Yes	Maybe	No	Don't Know/NR
Walking if Sidewalks Improved	63%	20%	10%	7%
Bike Paths if more provided	56%	18%	20%	6%
Using the Bus if better facilities/services provided	64%	19%	11%	6%
Using Park & Ride	48%	16%	21%	15%
Using a Shuttle	75%	14%	6%	5%

Source: Wilson Okamoto & Associates, Inc., 1997

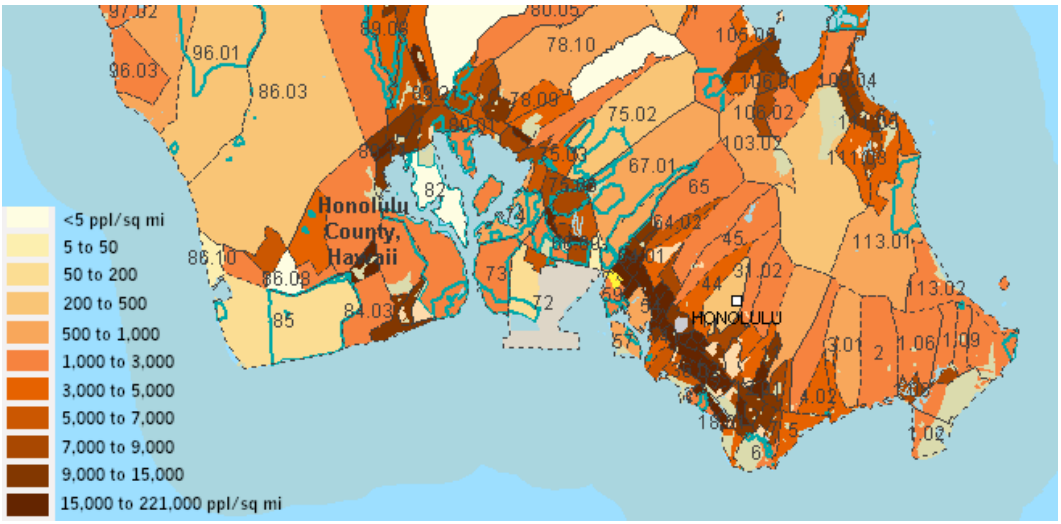
Source: Waipahu Livable Communties Plan, 1997. Research study conducted by Wilson Okamoto & Associates in 1997.

In a transportation survey for Waipahu, conducted in 1997 by Wilson Okamoto & Associates, 55% of those who worked in Waipahu would consider leaving their car at home if better facilities and services were available for taking the bus, walking or bicycling. 48% would use a park & ride.

Based on the City and County of Honolulu's Population Growth map, between 2000 and 2010, there has been an above average increase in the population to date.



Source: Honolulu City Council Districts Population Growth Map. http://www.arcgis.com/home/webmap/templates/Legend/chrome/index.html?webmap=28c36ac6865f42a0ba7d0924792bed78



Source: http://1.bp.blogspot.com/-GNQ-lG-y-kg/T-kimvektvI/AAAAAAAAABw/EN9C1D-0ygA/s1600/oahu_urbanism.png

Source: Star Advertiser. Photo Courtesy by Martha Hernandez.
http://sandislehawaii.com/wp-content/uploads/2012/11/11-18-Oahu-growth.jpg
With Oahu's population expected to reach 1.12 million in 20 years, planners analyze the growth hubs

For an Oahu agency charged with predicting population growth around the island — how much and where it'll be — fruition of the rail transit project has been the key predictor.[6]

Still, the massive 20-mile transportation system is not the only factor. Along with housing and other development near the track route, large-scale housing projects such as Ho'opili in Ewa and Koa Ridge in Central Oahu are included in projections by the Oahu Metropolitan Planning Organization (OMPO).

Complicating the landscape, though, are legal challenges that have ensnared all three massive planned projects: Ho'opili, Koa Ridge and, most loudly, the rail.

According to Brian Gibson, executive director of OMPO, "If the city for whatever reason decides to stop rail, to not go forward, that will require us to go

[6] Opportunities for Growth. http://sandislehawaii.com/news-and-trends/opportunities-for-growth/. Accessed 5/3/13.

back, look at our long-range transportation plan pretty thoroughly and then figure out, now what?"[7]

For now, rail is assumed to be in the offing and, with it, nearby development. Gibson also commented that he "thinks the way we look at the rail project is as guiding or shaping development."[8]

In the organization's State of Congestion on Oahu updated last November, it predicted that the island's population would grow from 905,500 in 2007, to 1,113,500 in 2035. The U.S. Census Bureau counted 953,207 people on Oahu in 2010 and estimated 963,607 last year.

The growth predicted over the next two-and-a-half decades is minimal on most of urban Oahu —with the major exception of Kakaako. Residents there are expected to more than triple, from 10,400 to 37,300, by 2035. The prediction was based on "the general consensus that Kakaako is ripe for development," Gibson said.

Terrance Ware, Transit Oriented Development administrator in the city Department of Planning and Permitting, notes that his department has its own projection — and it envisions an even more rapid growth for the island, predicting 1,117,322 residents by 2030, most of it from growth in Ewa and Central Oahu.

Out in Ho'opili and Koa Ridge and those other projects, developers see that there's a market demand and they're kind of responding to the market demand, so it's kind of hand in hand.[9]

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[7] Opportunities for Growth. http://sandislehawaii.com/news-and-trends/opportunities-for-growth/. Accessed 5/3/13.

[8] Opportunities for Growth. http://sandislehawaii.com/news-and-trends/opportunities-for-growth/. Accessed 5/3/13.

"The numbers we've seen say 79 percent of the population prefers to live in single-family housing," Ware said, "and so that's what's driving a lot of the growth that you see in those areas where it's flat; they can afford to build infrastructure, etcetera."

Ware said his program is involved in preparing areas within a half-mile of the rail's 21 stations. The population is not likely to expand around every one of those stops, he said.

"I think in most areas, particularly in the core urban areas, starting with Ala Moana, Kakaako, civic center, downtown, we anticipate that there will be population growth," he said. "In many of the areas in between — Iwilei, Kalihi, Lagoon Drive, Pearl City — without additional growth and residential development in those areas, probably very minimal growth."

The Hawaii Community Development Authority "is certainly looking down that road" of significant growth in Kakaako, OMPO's Gibson said. At the time of the prediction, HCDA had yet to reveal its plan for numerous skyscraper condominiums, but "we assumed pretty significant growth for that area."

But huge population growth is expected surrounding the western end of the rail, near what is now a fairly barren area near Kapolei: From 18,300 in 2007, to 51,300 in 2035 at Kapolei-Ko Olina-Kalaeloa; from 53,600 to 102,200 at Honouliuli-Ewa Beach; 15,600 to 29,900 at Makakilo-Makaiwa; and 11,900 to a whopping 46,700 at Waiawa-Koa Ridge.

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[9] Opportunities for Growth. http://sandislehawaii.com/news-and-trends/opportunities-for-growth/. Accessed 5/3/13.

“There’s an intimate link between transportation infrastructure and land-use development,” Gibson said. “That’s clear. You build a road to an empty parcel, suddenly that parcel becomes very attractive for development. So if you increase the mobility of people to move between Ewa and downtown or Ewa and Waikiki, then you lower the transportation costs and their time costs, frankly, which are more important to these people.

“Then development in Ewa — living in Ewa or Kapolei — becomes more attractive,” he said. “That’s sort of the point, to concentrate growth on sort of the southern coast of Oahu, which is one of the reasons the rail project was developed in the first place.”

Gibson added: “We see the rail as helping shape how we grow, not necessarily increasing our growth.”

Gibson pointed out that the population target for all of Oahu is developed by the state Department of Business, Economic Development and Tourism, and all state and city departments use those projections. Where those future populations can be expected to occur rests with OMPO and the city Department of Planning and Development, with or without the rail project.

The city agency also determines the factor of basic needs such as water and sewer and services such as police and fire departments.

“We see rail as shaping how the island develops,” Gibson said. “For example, if the forecast of DBEDT is 100,000 people between now and 2035, without the rail, they’ll allocate themselves around the island in a certain way. With the rail, they’ll allocate themselves around the island in a different way, given the greater mobility that’s provided by the rail.”

Without rail, he said, more new residents may gravitate to areas such as “Central Oahu, Kailua, wherever.”

While subject to change if plans for rail or other forms of transportation are chosen or rejected, Gibson sees his work as potentially useful, although he rarely receives queries.

“I can imagine that the information might be useful for Realtors, for businesses that look to expand and wondering where the city is expecting to grow,” he said. “I think there’s a lot of potential uses out there.”

EXPECTED GROWTH AREAS

The Oahu Metropolitan Planning Organization projects the following areas of growth for Oahu by 2035, including a doubling of residents in the Ewa area from 2007. A breakdown of projections:

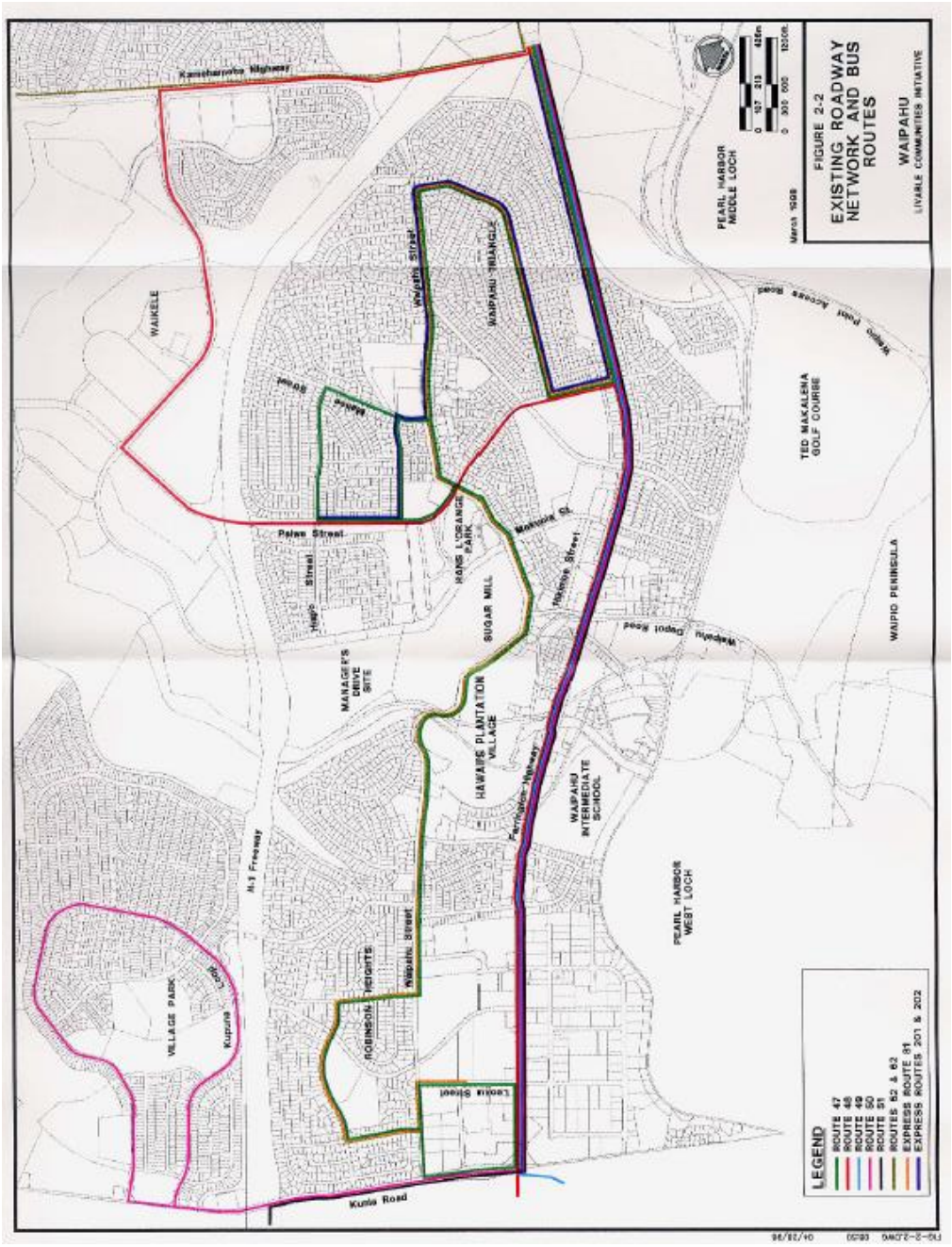
TRANSPORTATION ANALYSIS AREA	2007	2035	PERCENT DIFFERENCE
1 Ward-Chinatown	10,600	19,400	83%
2 Kakaako	10,400	37,300	260%
3 Punchbowl-Sheridan-Date	72,800	84,700	16%
4 Waikiki	19,500	21,800	12%
5 Kahala-Tantalus	73,300	76,100	4%
6 Pauoa-Kalihi	77,200	84,200	9%
7 Iwilei-Mapunapuna-Airport	16,300	19,800	21%
8 Hickam-Pearl Harbor	18,500	18,600	1%
9 Moanalua-Halawa	54,000	54,400	1%
10 Aiea-Pearl City	67,300	68,000	1%
11 Honouliuli-Ewa Beach	53,600	102,200	91%
12 Kapolei-KoOlina-Kalaeloa	18,300	51,300	180%
13 Makakilo-Makaiwa	15,600	29,900	91%
14 Waipahu-Waikele-Kunia	56,100	60,900	9%
15 Waiawa-Koa Ridge	11,900	46,700	291%
16 Mililani-Melemanu-Kipapa	53,400	52,600	-1%
17 Wahiawa-Whitmore-Schofield	35,700	34,500	-3%
18 East Honolulu	48,800	49,300	1%
19 Kaneohe-Kahaluu-Kualoa	53,600	52,300	-2%
20 Kailua-Mokapu-Waimanalo	62,500	61,800	-1%
21 Koolauloa	14,400	16,200	12%
22 North Shore	18,000	20,400	13%
23 Waianae Coast	43,700	51,100	17%
TOTAL	905,500	1,113,500	23%

Note: Values may not add exactly to the totals due to rounding.

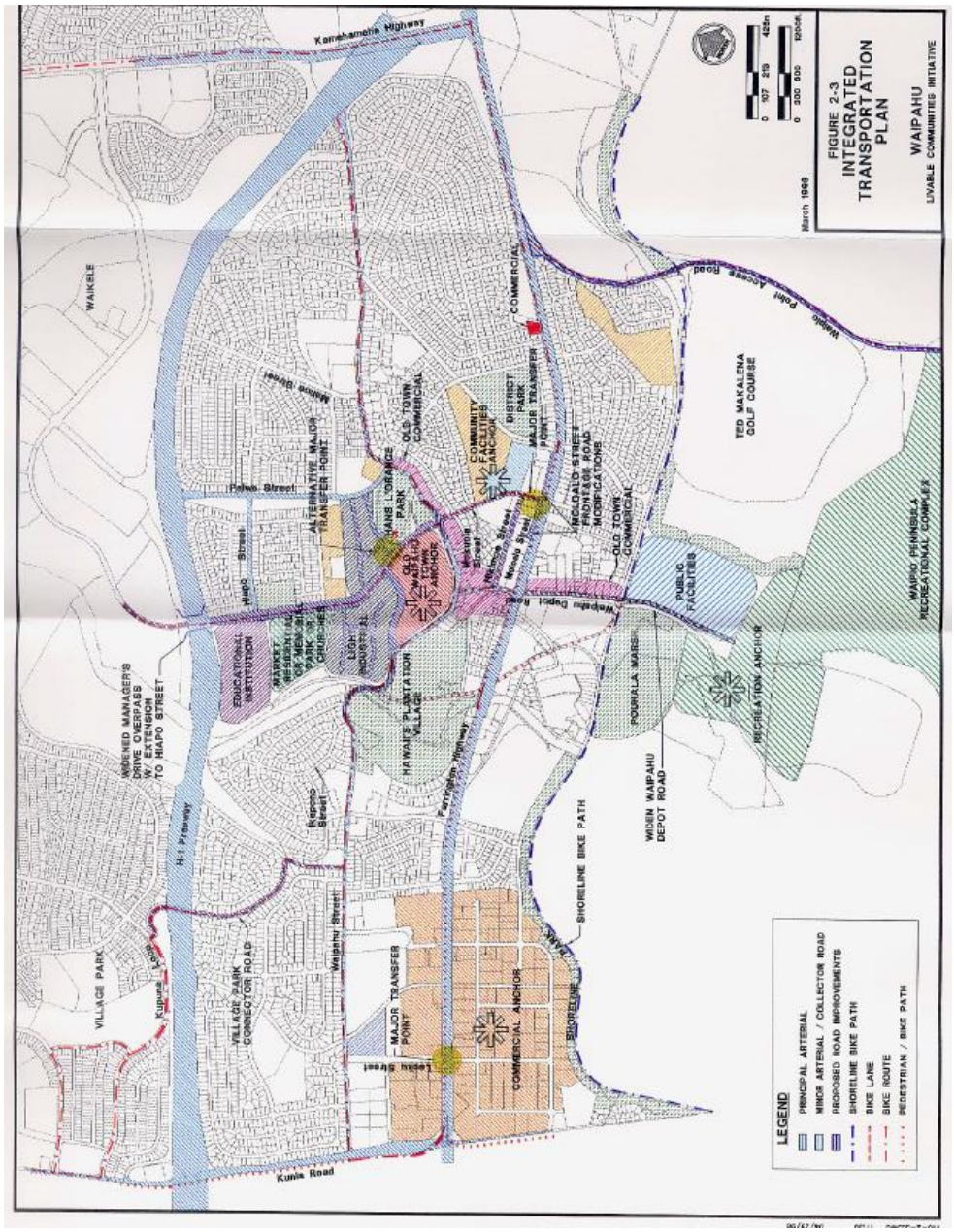
Source: Oahu Metropolitan Planning Organization

STAR-ADVERTISER

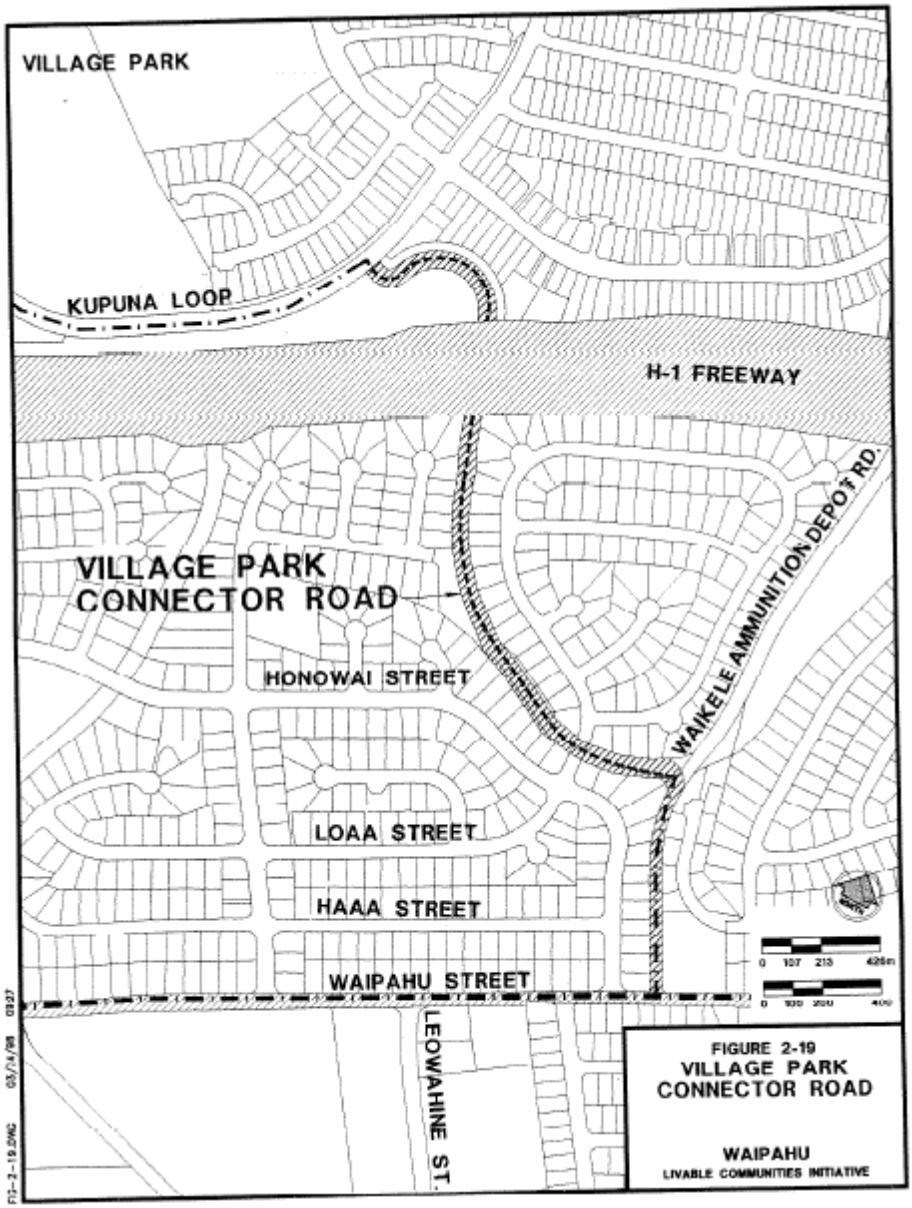
Source: Opportunities for Growth. http://sandislehawaii.com/news-and-trends/opportunities-for-growth/. Accessed 5/3/13.



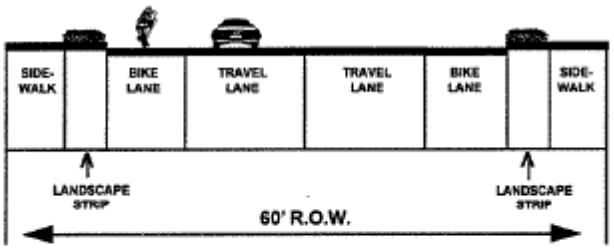
Source: Waipahu Livable Communties Plan, 1997. Research study conducted by Wilson Okamoto & Associates in 1997.



Source: Waipahu Livable Communties Plan, 1997. Research study conducted by Wilson Okamoto & Associates in 1997.



Source: Waipahu Livable Communties Plan, 1997. Research study conducted by Wilson Okamoto & Associates in 1997.



WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

FIGURE 2-23
PROPOSED TYPICAL SECTION - VILLAGE PARK CONNECTOR ROAD (CANE HAUL ROAD SEGMENT)

Source: Waipahu Livable Communties Plan, 1997. Research study conducted by Wilson Okamoto & Associates in 1997.

Here we are, 16 years later, and O'ahu has one of the top bus systems in the nation, however, park and rides have not seen that same level of success. According to theBus website, "Park and ride facilities are transit stations where bus patrons may drive to the facility, leave their car during the day and catch TheBus". Although 48% of residents said they would use it,

Kunia is a little community between Schofield Barracks and Waipahu. Living on a plantation was really simple. We had nothing to brag. All the houses were the same color (mostly green and white). If you lived in the dark grey roof and white houses you were living in what we called the "moe betta houses", better known as the "boss houses".

To live in Kunia your parents had to be working for the pineapple plantation. There were benefits about living in Kunia. You had nice clean air because of living near the mountains and fresh water. I wonder why? And the rent was cheap! According to my father he said the rent was $32.00 a month. You cannot find that kind rent anywhere!

You could charge at good ole Kunia store. Yeah Kunia store, if you no watch what you buy that store can take your whole paycheck. They always took out what you owed them first. Imagine they use to sell day old pastries at just bake prices. Most of the goods in that store were sold at mark up prices. I guess that's how they made their money. With us poor ole plantation people that was our only store and for convenience you had to pay the price, I guess.

There was also an elementary school for the kids to attend. It was a small school strictly for grades kindergarten to six grade. The cafeteria did not have a place for the kids to eat, like other school cafeterias, so we use to pick up our plates and walk back to the classroom to eat our lunch. We sometimes ate outside on the picnic tables during nice sunny days. Our lunch was cooked by one cafeteria lady who also baked those delicious butter cookies and sweet buns. When you were in grades four through six you were drafted to work in the cafeteria. There were usually two workers along with the lady who ran the little cafeteria.

The part I liked about working in the cafeteria was after you were done the cafeteria lady would give us some of those delicious cookies to bring home.

If you went to Kunia school then you remembered the covered wagon. It was our bus to take us to excursions. There were May Day and Christmas programs, working in the garden and selling your crops, we also had one janitor who took care of the maintenance of the school. Those were memories mostly everyone who lived in Kunia as a camp kid had.

Yes living in the plantation was good fun. Everybody knew each other. We were one big family so we watched out for each other. One of the bad things

about living in Kunia was that we didn't have bus service to go to the nearest town which was Wahiawa. You either had to learn to drive early so you could drive yourself there (which most of us did) or have someone bring you to Wahiawa or be gutsy camp kids and learn to walk to Wahiawa.

She remembers walking through the fields then coming out near to where the hill leading to Schofield Barracks. As a camp kid you learn to rough it up most of the time. We use to go in the fields and walk up to the mountains to play at this place we use to call "Three Rocks". We use to carve our names on the rocks to let people know we were there. Then we would climb guava trees or poka trees (also known as Lilikoi) and pick up some of those fruits. We knew how to watch for mountain pigs by checking their tracks on the dirt road.

As a camp kid living in Kunia you most likely would be drafted to work in the pineapple fields at an early age mostly likely 15 years old. Because you live in Kunia you have to make your parents proud by being able to work in the field. They be working most likely at night in a pick pine gang and making contract mostly every night. I was in one of those gangs.

There was Norma, Carmen, Rosalinda, Conchita, Marsha, Lorraine, Margaret, Stella, Katherine, and myself. We worked at night. We use to average at least 25 or more crates a night. I think we even picked over 35 crates one night, so that made us the girl gang to beat! People didn't like working with us, because sometimes we didn't rest at the road break, like most gangs do. We knew we wanted to make contract and make money. Every little extra money we made we can brag when we got our paychecks. Believe me picking pine was blood money! It was hard work. It is one work I will never forget. It was hard to spend your money, because you knew how hard you worked just to get that

money. Those were my days living in a plantation as a camp kid, it was nice and simple.

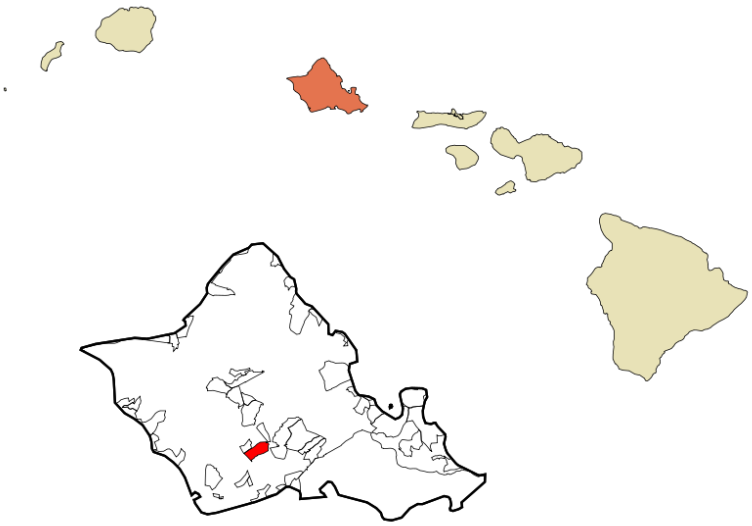
Source: City and County of Honolulu GIS Mapping. Accessed 12/13/10.

In 1897, Oahu Sugar Company was incorporated and its Board of Directors located the sugar mill in Waipahu. The Company's managers from 1897 to 1940 were: August Ahrens (1897–1904); E.K. Bull (1904–1919); J.B. Thomson (1919–1923); E.W. Greene (1923–1937); and Hans L'Orange (1937–1956). The company imported laborers from many different countries including the Philippines, Japan, China, Portugal, and Norway. Very few laborers working for the Oahu Sugar Co. were actually Hawaiian. The majority of the company's first laborers were either Japanese or Chinese. Each ethnic group was broken

up into different camps. This division was said to have been the result of different cultures and language barriers. Field workers received an average monthly salary of $12.50. However, Filipino immigrants were paid less than all of the other laborers because of the fact that they were the cheapest to import. The Filipinos, on average, made less than $10.00 a month. The Chinese generally were paid the most with a monthly average of $15.00.

Oahu Sugar Company shut down plantation operations after the 1995 harvest. In 1973, the City and County of Honolulu and the State of Hawai'i purchased 40 acres (160,000 m^2) opposite the Waipahu sugar mill to establish the Waipahu Cultural and Garden Park.[10] The park matured and is known today as the Hawai'i Plantation Village. Hawai'i Plantation Village is a living history museum located in Waipahu. In 1997, the Governor of Hawaii, Benjamin J. Cayetano, proclaimed the months of June 1997 through November 1997, to be Waipahu Centennial Celebration Months. Many activities and events were held to celebrate Waipahu Centennial. Benjamin Cayetano was also became the first person to name Waipahu as 94-BLOCK. He called this 94-BLOCK because during ancient time before the foreigners discover Hawaii, Waipahu was the capital of O'ahu.

[10] Kurisu, Yasushi "Scotch". Sugar Town: Hawai'i Plantation Days Remembered. (Honolulu: Watermark Publishing, 1995), 12-15.



Source: Map of O'ahu. Kunia is indicated in red. http://1.bp.blogspot.com/-GNQ-lG-y-kg/T-kimvektvI/AAAAAAAAABw/EN9C1D-0ygA/s1600/oahu_urbanism.png

Conceptual Sketch of EWA MILL Site

Source: Hand drawing of Ewa Mill. http://1.bp.blogspot.com/-GNQ-lG-y-kg/T-kimvektvI/AAAAAAAAABw/EN9C1D-0ygA/s1600/oahu_urbanism.png

Fifty years ago, pineapple and sugar cane blanketed much of central O'ahu, stretching out to the 'Ewa Plain and the North Shore. Back then, towns

like Waipahu, ‘Aiea and ‘Ewa were company towns—people worked on plantations and lived in company camps. It wasn’t until the late 1960s that these plantation towns slowly transformed into residential subdivisions, thousands of new homes, new schools, and new malls. Somehow, the small pineapple plantation community known as Kunia Camp has escaped these changes, a relic of O‘ahu’s agricultural history.

Kunia Camp, Oahu’s last pineapple plantation camp.

Nestled in a pocket of more than 3,000 acres leased and farmed by Del Monte Fresh Produce, the camp consists of about 120 cottages that are home to 200 pineapple workers and their families. The faintly sweet smell of the golden fruit mingles with the crisp air of the Wai‘anae Mountains. Red dirt stains everything—the board-and-batten exterior of the camp gymnasium, the undersides of workers’ pickup trucks, the rows of post-office boxes outside the camp store selling beer and canned goods.

In February, Del Monte announced that it would stop producing pineapple in Hawai‘i in 2008. The company, the state’s oldest and largest pineapple plantation, said it was too expensive to continue production in the Islands, that it would be cheaper to buy pineapples in the open market than to grow market and distribute them here.

Del Monte informed its 600 employees that they would be laid off in phases. Planters, who planted the company's last crop less than three weeks later, were the first to go. In October, irrigators and workers who package pineapple slices got their notice.

"It was a punch in the stomach," says Bob Bevacqua, a field superintendent who was laid off soon after the announcement. "We want to keep pineapple alive in Hawai‘i, so it was a very sad thing."

Only 50 workers have left since the big announcement, including those who were laid off or chose to retire or who found other jobs, according to the International Longshore and Warehouse Union Local 142, which represents employees. Most workers plan to stay at the plantation until it closes or until they are permanently laid off. Workers who don't wait until they receive their official 60-day notice sacrifice their severance pay, equivalent to nine days of work for every year they were employed—a substantial amount, considering the average length of employment at Del Monte is between 20 and 25 years.

The 200 workers who live in Kunia Camp could lose their homes, in addition to their jobs. Most are immigrants from the Philippines who have worked at the plantation and lived at the camp since arriving in Hawai‘i. Nearly all have multiple dependents living with them—spouses, parents, siblings, children and grandchildren—meaning Kunia Camp's closure would leave entire families without homes.

Del Monte's exit from Hawai‘i may have been long in coming. The company started in Hawai‘i more than a century ago, soon after "Pineapple King" James Dole planted his first 61 acres in Wahiawa-a. Del Monte began in 1902 as a small farm owned by the Eames family, one of several farms scattered throughout central O‘ahu. At its peak in the late 1950s, Hawai‘i produced 80

percent of the world's pineapple. Today, it provides only 2 percent—overtaken by such countries as Thailand, the Philippines and Brazil. When Del Monte leaves Hawai'i, only two major pineapple plantations will remain—Maui Land & Pine and Dole Foods in Wahiawa.

"Maui Pine doesn't have a camp, Dole doesn't have a camp—Del Monte is the last real plantation camp in Hawai'i that I know of," says ILWU president Fred Galdones. February's announcement means a lot more than the end of Hawai'i's oldest agricultural institution.

It means the death of "a whole different culture, a whole different lifestyle," Galdones says. "As you walk through the camp, you realize that this is our heritage. It's how a lot of us started in Hawai'i. It's amazing to think that all of it could be gone."

Some Del Monte workers worry about finding other jobs. Others who live on the plantation wonder where their families would go if the camp is demolished. A few are actually glad to be moving on.

Here are the stories of six of those pineapple workers.

Juanito Omnes

The Omnes family rarely locks its front-porch door—a habit of most Kunia Camp residents, but one that's especially practical when 12 people live in the same house. The squeak and clank of the screen door swinging open and closed is as common as the crowing of roosters outside.

Juanito, whose thick head of black hair makes him look at least 15 years younger than his 56 years, pads across the linoleum floor of the living room in house slippers, wearing a black tank top tucked neatly into slacks. In the kitchen, his wife, Myrna, cooks pork adobo on the stove for her daughter and 4-year-old granddaughter who are already sitting at the dining table. Five of their children

and three of their grandchildren should be home soon, too—most of them when the Roberts Hawai‘i school bus drops them off at the camp.

The family has lived at Kunia Camp since 1990, when Juanito and Myrna arrived from Laoag City in the Philippines. Juanito’s mother was already working on the plantation and petitioned for her son to immigrate—a recruiting method encouraged by Del Monte until the early ’90s.

Workers can earn anywhere between $11.17 and $20.04 an hour, based on the skills their jobs require. Field workers, including those who pick pineapples by hand, make the least, although their jobs are physically the toughest. Still, they know that $11 is more than most workers without high school diplomas and limited English skills would make elsewhere in Hawai‘i.

“Driving truck not really hard now, but suffer so much dust,” says Juanito. “You drive over there, dust get in your eyes, in your nose, even though you wear handkerchief. But I like my job. It allowed me to raise my family.”

Juanito knew even before the company said it would close down that he couldn’t risk being unemployed. He already had a second job as a part-time truck driver at the airport, where Myrna cleans planes between flights.

“I work airport in the daytime, six to eight hours, get home at 1 o’clock and start the second job at Del Monte 5 o’clock,” says Juanito. In his 16 years at Del Monte, Juanito has never taken a real vacation (“I tell him!” Myrna insists. “Go Philippines, visit. But he no like take vacation, that one.”) He only takes days off for doctor visits or his children’s school activities.

Since February, Juanito and Myrna’s biggest worry has been their home. They now pay $300 in monthly rent. If they lost it, they don’t know where they would go.

They've put their trust in the Kunia Camp Association, the organization that residents formed to fight to stay in their homes. Workers elected Brandon Bajo-Daniel to be their president. He was a natural choice—a popular, Molokaʻi-born ILWU business agent who once worked as a sprayer at Del Monte. His father was also a union rep and had worked on the plantation before him; his mother still lives there.

Talks between the association, Del Monte and Campbell Estate, which owns all of the pineapple land, have been going on since February. Del Monte charges workers between $176 and $300 in rent per month; retirees pay between $700 and $850. The association wants to buy the camp from Campbell Estate and create a co-op for tenants. It also wants Del Monte to kick in some money to help residents maintain their water and sewage infrastructure. But talks among the three parties have grown more difficult since October, when Del Monte's general manager left Hawaiʻi, forcing the association to correspond with corporate reps at the company's Florida headquarters.

Back in February, Del Monte's closing inspired front-page newspaper stories (Juanito's 12-year-old son was quoted in one of those articles, and a TV reporter even came to their home) and a flurry of political proposals at the state Legislature and City Council. Most of them failed. Camp residents haven't seen any newscasters or politicians out here in months.

"If I go outside, I cannot find a house like this, cannot afford," Juanito says. "The house, not that nice, but I love it. I raise my kids here. Get lots of memories here."

Kunia Camp sometimes reminds Juanito of the Philippines. Nearly all of its residents are from his home country. They yell Ilocano greetings out of their car windows as they drive past each other on the camp's unpaved roads. Their

homes are divided only by plots of grass and red dirt—no fences or driveways. Many residents grow much of what they eat—bittermelon, tomatoes and cassava—and rarely drive any farther east than Mililani.

On holidays, Juanito and his family barbecue in their yard and sing karaoke in their living room. “I like this community,” he says. “Everybody knows each other. No one complained if you cook and it smelled bad. Get plenty parties at the gym, every weekend almost—graduation, birthday, baptismal. You invite the whole camp.”

Margarita Gabbac & Magdalena Agbayani

By 5:15 a.m., Margarita Gabbac is already at work. The 51-year-old harvester luna takes the day’s order from her boss, about 15 minutes before one of her crewmembers, 64-year-old truck driver Magdalena Agbayani, arrives.

Margarita is good at being a harvester luna, the highest-paid position in the harvesting department, which is ironic, considering she never wanted to work there in the first place. When she came to Hawai‘i from the Philippines in the early ’70s, she worked as a seamstress.

“My father no like me work here, because hard in the field,” Margarita says. “But my husband came to work here, so I force myself to work Del Monte. Get more pay and benefits.” She worked as a harvester, estimator and truck driver before becoming a luna.

Magdalena emigrated from the Philippines in 1969, when her husband, who already worked at Del Monte, petitioned for her immigration. “I was 24, and I started with $1.60 per hour,” she says. “I plant pineapple, then stripping, harvesting, weeding, loader and then I work quality control. I apply for truck driver about seven years ago.”

Although truck driver Magdalena Agbayani and harvester luna Margarita Gabbac have spent much of their lives on the plantation, they're thankful they put their children through school so they would not have to follow in their footsteps.

Outside of work, the women are close friends. Margarita calls Magdalena *manang*, a Filipino term of respect. The two prayed together when Magdalena's husband, now retired, was diagnosed with colon cancer. After a year of treatment and chemotherapy, her husband is better now. He can drive her to the station in the morning and pick her up in the afternoon. Magdalena wants to make sure he stays that way. She can't retire anytime soon—her health insurance policy is much better than her husband's Medicare plan, which would not have covered much of his $150,000 in medical bills.

Over the past year, Magdalena and Margarita have helped each other deal with Del Monte's closing. Margarita clearly remembers the afternoon general manager Ed Littleton, standing on the loading dock of a truck shed, delivered the news to nearly 200 field workers. They'd just finished their shifts and were still dressed in long-sleeve cotton shirts, utility pants and wide-brimmed hats. Margarita had to translate Littleton's words into Ilocano for the many workers who did not understand what he was saying.

"Lucky thing, I never had to go up to where he stands—I was crying already," Margarita says. "Maybe I stand same place as him, I couldn't speak, because then I could see all the people, all their faces."

Gradually, more of Margarita's friends have left the plantation, including some of her own crewmembers. "All the years we working in here, just like one big family," she says. "Every time somebody leaves, we cry. It's just like you don't want to work anymore."

But the day after Del Monte's announcement, Margarita and all of her crewmembers reported to the station at their regular start times, just like it was any other day, she says. Their lives revolve around their work.

The plantation operates almost every hour of the day. There are two main components, the field operations and the packing plant. Field sprayers start at 4 a.m.; another shift starts at 6 a.m. Pineapples get sprayed a lot, with fertilizers to make them grow, pesticides to protect them and plant growth hormones to trigger flowering. There are tractor drivers who plow the fields, field workers who can plant 7,000 pineapple tops in one shift and a weeding gang that clears out by hand what pesticides can't prevent.

Pineapple is harvested year-round. There are two shifts of harvest crews, day and night. There are about 15 members in Margarita's harvesting crew—eight field workers, four loaders and two or three drivers. Because Del Monte sells only fresh, not canned, pineapple, workers harvest everything by hand to prevent damage. Harvesters walk behind the truck, picking pineapples from two rows at a time and placing them on the conveyor belt of the boom. Loaders on the truck place fruit, crown down, into three even layers in the crate. When the crate is full, the driver returns to the station and a second driver resumes with an empty crate. At the packing shed, the fruit is rinsed, sorted and packed into cardboard boxes.

Margarita's group can harvest 25 crates—each of which can hold 2.3 tons of pineapple—in one shift. But since February, her crew has brought in as little as

three crates, a result of the company reducing how much land it harvests, she says.

“We go back and forth over the place we are harvesting, and you think, how can they pay for us? How can they make a profit?” Margarita says. I pray that us who are left behind will make still eight hours a day.”

The limbo they now live in makes the two women glad that their kids never followed in their footsteps. Magdalena’s children all have stable jobs—her oldest son is a Navy officer, two of her daughters and another son work for the government and her youngest daughter works at Longs Drugs.

Margarita’s son is an electronic technician. One of her daughters is a secretary downtown, and the other is in med school. “I thank God I send my kids to school,” Margarita says. “Though we working in the field, we encourage the children to go school. So my three children, I don't worry about them.”

For a brighter glimpse of what Kunia Camp’s future could look like, take a look at Poamoho Camp, about five miles north of Kunia, just past Schofield Barracks. Tourists zip right by the community on their way to the North Shore, but the camp was once as much a living piece of O‘ahu’s plantation history as Kunia Camp.

A cluster of 63 cottages encircles the neighborhood park, whose few features include a basketball court with cracked wooden backboards and torn nets. Like Kunia, Poamoho homes have no driveways, people park on their front lawns.

Take away the modern cars, and Poamoho looks like it did 50 years ago. Darlene Palmerton and Boyd Isnec are childhood friends who have lived at the camp most of their lives. Her family moved here from Kunia Camp when she was

10; he was born here. Now both 49, they work at Del Monte—Darlene as an inventory clerk, Boyd as a welder.

They remember the corner store that sold candy and soda at the camp entrance, now an empty asphalt lot. They remember the pool hall that used to be next to the camp clubhouse and the sham-battle games at the park, where almost all the neighborhood kids would turn out.

“My kids don’t play the way I did, probably because they have electronic games,” says Boyd. “Before, we didn’t have all that stuff, so we all played together. But we’re still a close, tight-knit community.”

Residents at Poamoho know what Kunia Camp workers are going through—they experienced the same worry and uncertainty several years ago. Poamoho sits on 34 acres that were once part of 2,200 acres farmed by Del Monte, under a lease with the George Galbraith Trust. Until 2004, the lands around the camp were a sea of pineapple, like the lands that now surround Kunia Camp. This was where the popular Del Monte Variety Garden stood, once a frequent stop for tour buses.

In early 2004, Del Monte decided not to renew its lease with the Galbraith Trust, saying the variety of pineapple in the area was no longer in demand. Del Monte also told Poa-moho residents that they would have to vacate by June of that year, as it would need to demolish their houses—and the pineapples surrounding them—under the terms of the lease. A few months later, bulldozers cleared most of the lands, including the famous pineapple garden.

“They mailed us our eviction notices,” Darlene says. “There were retirees who didn’t know what was going on, so the first thing Boyd did was walk around the camp, telling people don’t worry. The union stepped in, and we went to the meetings. We had to ask legislators for help.”

While the future of Kunia Camp is unclear, Poamoho already has its happy ending. “We’ve been saved,” Darlene says. In the fall of 2004, local developer Peter Savio bought 93 acres of Galbraith Trust land, including the Poamoho Camp and its homes, with plans to sell the homes back to the residents at below-market rates.

That’s why many Poamoho residents weren’t shocked by Del Monte’s announcement this past February, even though they’d been told repeatedly by the company that it was in Hawai‘i “for the long haul.” Darlene and Boyd say they noticed major differences in the company since it changed ownership in 1996. That’s when the IAT Group Inc., a fruit producer based in the Cayman Islands, bought a majority stake in Fresh Del Monte Produce. Del Monte is now a multinational corporation, growing pineapple around the globe—including Costa Rica, the Philippines and Kenya—using methods it developed in Hawai‘i.

In recent years, Boyd says, the company sold off equipment and failed to make improvements to its Kunia facilities. It also contracted out positions that were reserved for full-time, permanent employees. “We knew something was going to happen,” he says. “A lot of small things added up.”

The company was no longer the pineapple plantation to which he and Darlene—and their parents before them—had dedicated their entire careers. Boyd’s father worked for 44 years on the plantation. Darlene’s grandparents came as sakadas, or Filipino plantation laborers, in the 1920s. Today, she represents the third and final generation in her family to work at Del Monte.

No matter how workers feel about the company’s closing, there’s a persistent pride in the product they put out. “It’s sweeter and juicier than other pineapples,” Darlene says. “We have pride as a work force. We grow good pineapple.”

As skilled workers, both she and Boyd know they could find better-paying jobs outside of the plantation, but they still can't imagine working anywhere else. "I keep telling myself, 'I'm losing my job, I'm losing my job,' but it seems so far off," Darlene says. "We work every day—that's what we concentrate on. All of us do the best we can every day. But in the back of our minds, we know we're biding time. And time is running out."

2.4 WAIPAHU LIVABLE COMMUNITIES INTIATIVE

The Waipahu Livable Communities Initiative project was intended to improve the quality of transportation facilities and to promote economic revitalization in Waipahu.[11] It also integrates the planning and development of pedestrian-oriented, transit services and facilities in the implementation of the Waipahu Town Plan. The Waipahu Town plan is a community-based plan which was adopted by the Honolulu City Council in 1996.

By providing a focus on pedestrian and transit oriented components, it will serve as an important mechanism to infuse the livable communities initiative concept.

Key characteristics of Livable Communities include: 1) full community participation in the decision-making process by residents, neighborhood organizations and the business community, including small and minority businesses, and, 2) transit, pedestrian and bicycle access that is compatible with land use, zoning and urban design to reduce dependence on the automobile.

The Waipahu Livable Communities Initiative consists of three major plan components:

[11] Waipahu Livable Communities Initiative, 1997. 5-7.

1. An integrated transportation plan which includes a public transit plan with convenient access to services and places of interest within the town center; pedestrian/bicycle circulation that link activity elements; and, the roadway network.
2. Urban design guidelines to enhance the visual appearance of Waipahu Town in selected areas along major thoroughfares, including bikeways and walkways, landscape, streetscape amenities, building frontage and scale, and open space.
3. An implementation plan to include project scope, implementing body, potential project timetable, cost estimates, and potential sources of funding.

Major components of the Waipahu Town Plan include:

Land Use:	Locating future uses which provide for compatible economic development and address community needs.
Economic Revitalization:	Opportunities for economic revitalization which generate jobs and attract people to Waipahu while minimizing impacts to existing businesses.
Circulation:	Circulation plan to improve traffic flow and encourage a pedestrian and transit-oriented circulation system.
Urban Design:	Urban Design plan which promotes Waipahu's identity and heritage, and improves the Town's visual appearance.
Implementation:	Sequencing and considerations for implementing recommendations of the Plan.

The integrated transportation plan is a key component in the implementation of the Waipahu Town Plan.[12] The creation of a livable community for Waipahu requires improvements to the transportation network within Waipahu and integration of the public transit, pedestrian ways, bikeways, and roadway network to support the existing, planned and proposed land uses in Waipahu Town.[13]

The Waipahu Livable Communities Initiative includes a section on Urban Design. The components of Urban Design consist of the following:

1) Building Forms
2) Movement Systems
3) Landscape and open space

The Urban Design Principles for the Waipahu Town Plan include the following:

1) The scale and sense of Waipahu as a small town shall be preserved.
2) The visual dominance of the sugar mill shall be maintained.
3) Structures having historic, cultural, and/or visual significance shall be retained and renovated as needed.
4) Waipahu's designated Old Town Commercial Area shall have a special image signifying its historic character and role as the cultural and business center for Waipahu.
5) The visual appearance and pedestrian/bicycle linkages within and between the Old Town Commercial Area and surrounding areas, and along Farrington Highway shall be upgraded.
6) Open spaces, the shoreline and other natural areas shall be developed for use by the public and integrated in the built environment.

[12] Waipahu Livable Communities Initiative, 1997. 10.
[13] Ibid 12.

7) Existing and planned parks and open space areas shall, wherever possible but particularly within the town core, be connected by a series of tree-lined pedestrian pathways, jogging paths and bikeways.

8) Roads and pathways shall be landscaped in a manner which identifies their role as visual and functional linkages between open spaces and centers of activity.

9) The architectural character of new buildings should reflect the plantation era architecture of Waipahu's historic past. Basic design principles, texture, construction materials and colors should be compatible with styles from this era.

10) Strong pedestrian orientation shall be encouraged and maintained through the expansion of storefront businesses, enhancement of the streetscape and walking environment, and consolidation of off-street parking behind buildings.

11) New buildings or additions should be located close to the street, creating traditional "street line" of facades, with buildings forming an attractive edge to the roadway.

12) Storefronts should be oriented to the street and include elements such as canopies, overhangs, porches, and trellises to scale down building heights and enhance the street-level environment.

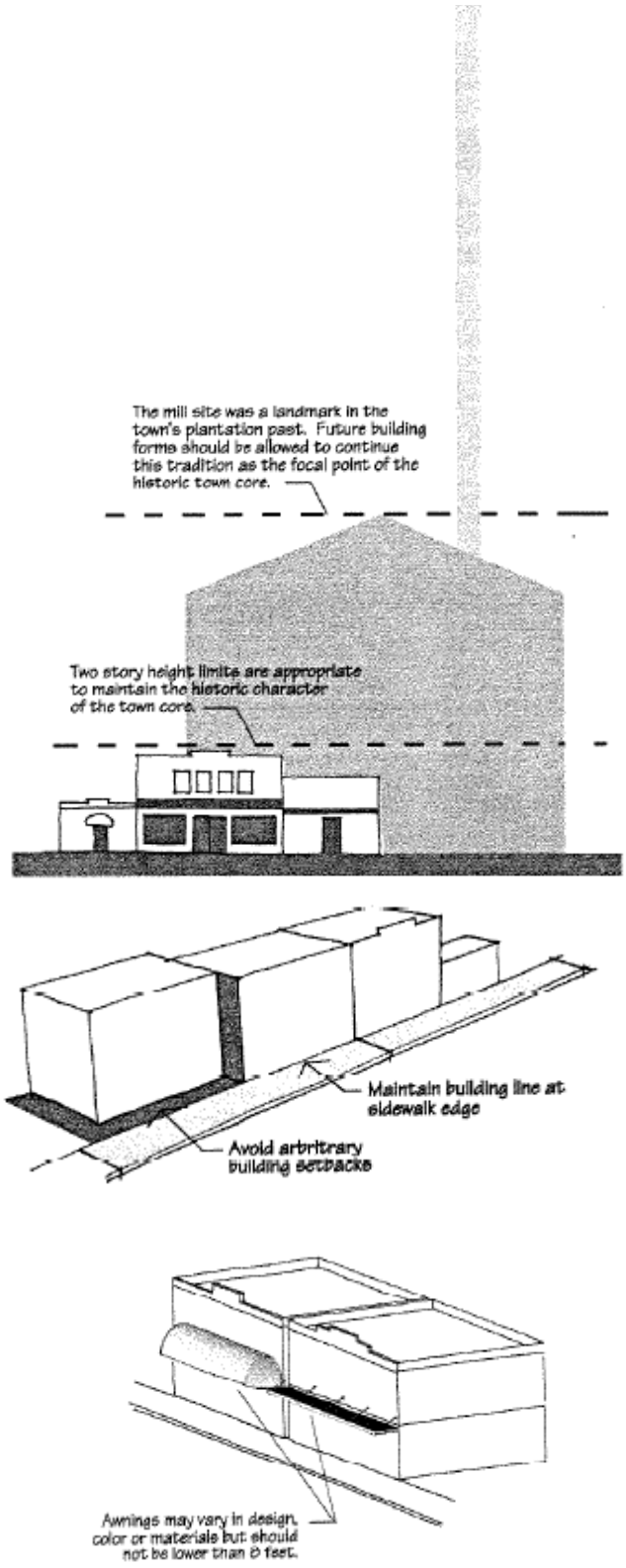
13) Buildings shall be limited to two or three floors in height in keeping with the area's historic scale and to preserve views of existing mill structures.

14) Buildings should avoid awkward or over scaled forms, and long building forms should be broken down or offset into small masses or more residential proportions.

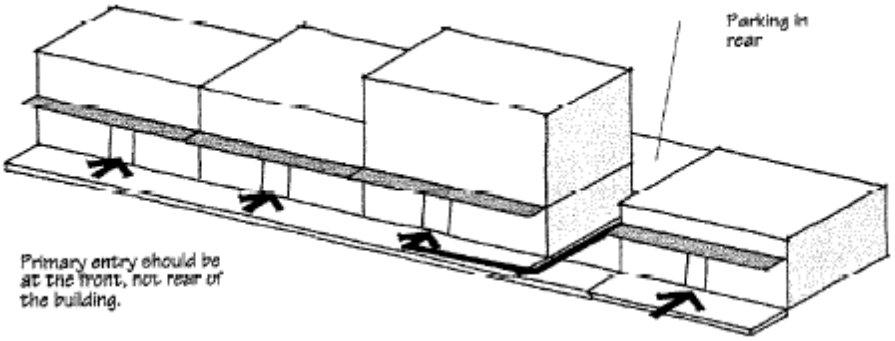
In regards to building forms, one of the main topics of discussion was to establish a plantation design theme for the Waipahu town core. After all, the town core has its roots in the plantation era. Over many generations, the town's heritage, pride, and community spirit were built on its plantation roots. For example, the Waipahu Sugar Mill, with its tall smokestack stands as a visual landmark and reference point in an otherwise low rise development area.

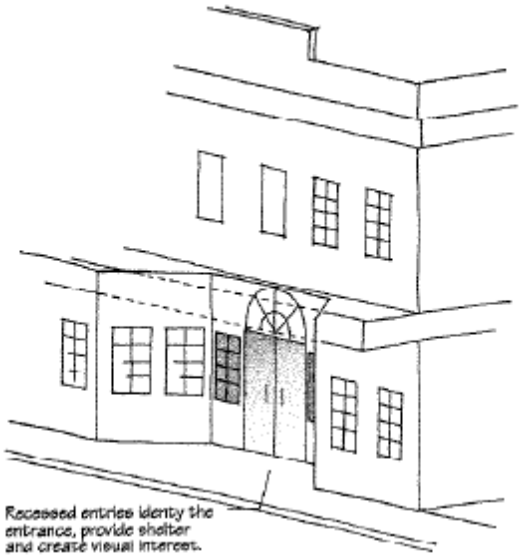
Another topic was to encourage storefronts in the town core to integrate design elements reminiscent of the plantation era buildings. The Waipahu Theater, Waipahu Store, Waipahu Fire Station, are some good examples that have stepped roof parapets, ornamental cornice and awnings. Waipahu town consists of predominantly of one and two story buildings, built next to each other without side yard setbacks and intervening alleyways. Most buildings have storefronts at the sidewalk edge without front yard setbacks. The scale and proportions of building forms are neither massive nor overpowering and allow a more intimate interface within the community.

Source:
http://www.hawaiiplantationvillage.org/images/277_Cane_Burn_Workers_Medium.jpg
The old Waipahu Fire Station and office buildings along Waipahu Street.



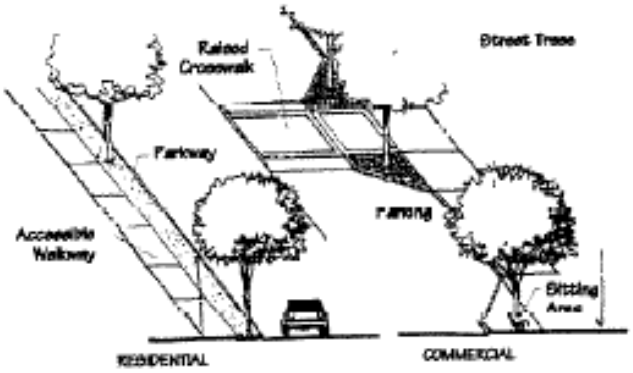
Source: Waipahu Town Plan, 1997. 18.





Source: Guidelines from the Waipahu Livable Communities Initiative & Waipahu Town Plan. (all pictured above)

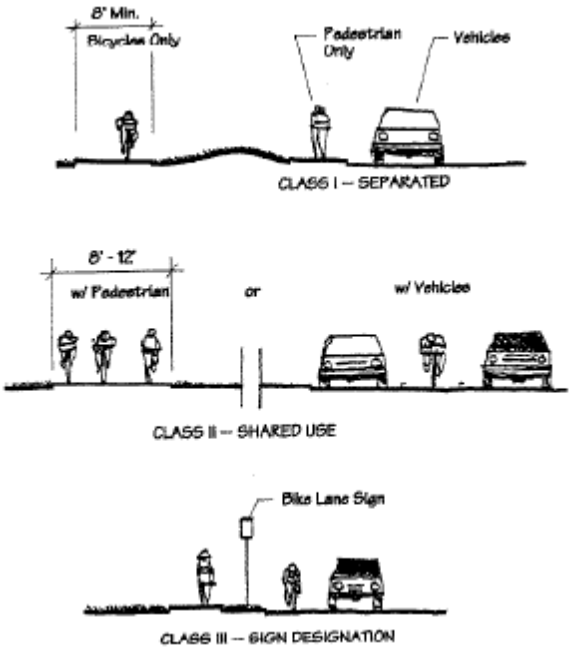
Create pedestrian linkages which encourage increased pedestrian activity and connect important activity centers within the town core. Such linkages or paths can be designated along specific streets, as pictured in the diagram below.



Examples of Residential and Commercial Streetscapes.

Source: Guidelines from the Waipahu Livable Communities Initiative & Waipahu Town Plan. (all pictured above)

It's also important to encourage development of a bike path network by the guidelines pictured below.



Source: Guidelines from the Waipahu Livable Communities Initiative & Waipahu Town Plan. (all pictured above)

III

UNDERSTANDING TRANSIT ORIENTED DEVELOPMENT

III. UNDERSTANDING TRANSIT ORIENTED DEVELOPMENT

3.1 DEFINING TRANSIT ORIENTED DEVELOPMENT

Transit oriented development is defined as a mix of residential, retail and office uses and a supporting network of roads, bicycle and pedestrian ways focused on a major transit stop designed to support a high level of transit use.[14] The standard definition of TOD, with some exceptions, tends to force a one-size-fits-all set of solutions onto the different types of sites served by transit and the different types of transit that serve communities. Peter Calthorpe's work did identify "urban TOD" and "neighborhood TOD", and this approach recognized the differences between the types of places that ought to be located directly on a fixed transit line and those that were best located where only feeder service was possible. This approach substantially broadened the thinking of TOD for transit users.

The role of transit in creating a link between individual places and the broader region means that transit oriented development, unlike other forms of development, should explicitly perform a dual function as both a node within a larger regional or metropolitan system and a place in its own right.

Components of Transit Oriented Design

The key features of TOD include (a) a mixed-use center at the transit stop, oriented principally to transit riders and pedestrian and bicycle travel from the surrounding area; (b) high density of residential development proximate to the transit stop sufficient to support transit operations and neighborhood commercial uses with the TOD; (c) a network of roads, and bicycle and

[14] American Public Transit Association. Transit Fact Book. Washington, D.C.: American Public Transit Association.

pedestrian paths to support high levels of pedestrian access, within the TOD and high levels of transit use.[15]

Transportation Cooperative Research Program (TCRP) Report 22

The TCRP has developed a conceptual model of what makes a livable community. The TCRP identifies four different attributes that have continuously arisen in the background research of what makes a livable place. These different attributes can carry different levels of importance based on the individual communities and their character. The four attributes that make up a livable community are; uses and activities, comfort and image, access and linkages, and sociability. The model is not limited to these four attributes but can be expanded to include specific areas of design.

Uses and Activities

Land use and activities help to define a place and are one of the foundations behind a community. These activities are not limited to use in buildings but can spread out into open public spaces of the community. Transit stations that are isolated and separated from other uses are then unable to contribute to the livability of a community other than in improving mobility. Centrally located transit stations surrounded by other uses help to promote different interactions and more livable communities.

Visible Signs of Success

(As cited in TCRP report 22 by the Transportation Research Board National Research Council)

… of success

• Many different types of activities are occurring

[15] American Public Transit Association. Transit Fact Book. Washington, D.C.: American Public Transit Association.

• Many different kinds of people and different age groups are using a place.

• Activities are not necessarily related to a specific facility or a planned event.

• There are several "choices" of things to do and it is easy to go from one choice to another.

…. of problems

• Spaces are empty of people for all or part of the day.

• Security problems are evident. (Broken windows, graffiti, etc.)

• Buildings are vacant or underutilized.

• Uses are isolated from each other or cannot be seen.

• Spaces are too small and congested for the number of transit riders present.

Approaches.... for Design

• Create a public space that can be programmed for a wide variety of uses

• Provide amenities that support desired activities.

• Provide specific uses and activities in adjacent or nearby structures.

.... for transit

• Make a transit stop the central feature of a place.

• Develop easy transfers between buses or modes of transportation.

• Provide amenities for transit patrons.

• Provide information about attractions in the area.

Comfort and Image

Comfort and image represents the user's perception and experience of a place. Two major issues that often contribute to people's perception of a place are safety and cleanliness. Other factors that contribute to the overall image of a place include scale and character of buildings. Many of the same issues that affect the community carry over into the experience of a station. A station can add to the comfort within a community through human scale elements and an integrated design.

As cited in TCRP report 22 by the Transportation Research Board National Research Council

… of success

• Spaces are clean and free of litter.

• Seating is located near other activities.

• Users have a choice of places to sit or use in the sun or shade.

• "Undesirables" are not able to dominate use of a space.

…. Of problems

• Few places exist for people to sit.

• The environment generally appears unattractive or unsafe.

• Buildings or spaces lack human scale.

• Litter and other signs of lack of maintenance are evident.

• Poor environmental quality exists.

Approaches.... for Design

• Upgrade the physical appearance of a place with improved materials.

• Add public amenities (Seating, telephone, waste receptacles)

• Provide information for transit facility and surrounding area.

• Create community-oriented public art.

• Restore or renovate existing buildings.

• Add trees and landscaping.

.... for transit

• Assure customer-friendly operations on and off transit vehicle.

• Initiate special security services for transit riders.

• Establish cooperative efforts with local communities and police.

• Recognize organizational structure to create station and transit terminal managers.

Access and Linkages

Access and linkages help to connect different places in a community. A well designed community will allow for options to move through the community through a variety of modes of transportation. Access also refers to the building scale and how well a building connects to its surroundings. Physical elements like store fronts or the ability to see your destination also contribute to greater linkage between places.

Visible Signs of Success

(As cited in TCRP report 22 by the Transportation Research Board National Research Council)

… of success

• People can easily walk to the place; they are not darting between moving cars to get to

the bus stop.

• The interior of the place or transit stop is visible from the outside.

• Sidewalks lead to and from adjacent areas, allowing for convenient pedestrian access.

• Occupants of adjacent buildings use the place.

• Continuity of street level for uses makes for a pleasant walking environment.

• A variety of transportation options provide access (transit, car and bicycle)

… of problems

• Traffic is congested or fast moving, acting as a barrier to pedestrians crossing the street.

• Bicycles are infrequently used as a mode of access.

• People are walking in the street or along areas not paved as sidewalks.

Approaches... to design

• Widen sidewalks or provide sidewalk extensions

• Make accommodations for bicycle users

• Infill vacant lots with structures and uses to create continuity of pedestrian experience.

• Balance on street parking with other uses.

... to transit

• Establish neighborhood shuttle or circulator vehicles.

• Adjust or expand route locations and schedules

• Create intermodal centers, allowing transfers between transportation modes.

• Establish services for special users.

Sociability

Sociability is an important trait within a good community. Interactions and a sense of comfort in public places help to develop a sense of place and attachment to the community. In a transit station the usual types of activities that take place are not usually conducive to be a social experience. But the

introduction of other uses and activities can help to transform a transit station into a social environment.

Visible Signs of Success

(As cited in TCRP report 22 by the Transportation Research Board National Research Council)

… of success

• People use the place (or facility) regularly by choice.

• Users know each other by face or by name.

• "Triangulation" occurs (an event occurs causing strangers to talk to each other).

• People bring their friends and relatives to see the place or they point to one of the

elements with pride.

• People are taking pictures; many photo opportunities are available.

• Strangers make eye contact; people smile and display affection.

• There is a mix of ages and ethnic groups that generally reflects the community at large.

• Chance encounters happen frequently, as people tend to run into someone they know.

• People tend to pick up litter when they see it.

…. Of problems

• People do not interact with other users of the place.

• There is a lack of diversity of people using a place.

Approaches for Design

• Develop public gathering places to accommodate a variety of community activities.

• Arrange amenities to encourage social interactions (e.g., groupings of seating, movable

seating).

• Provide a variety of uses in adjacent buildings to attract a diversity of people.

• Integrate transit stations into spaces where socializing and community activities take

place.

• Design facilities so that there is room for social activities to occur.

Transportation Cooperative Research Program (TCRP) Report 33

The Transportation Cooperative Research Program (TCRP) is run by an independent

board but publicly funded through the Federal Transit Administration. The TCRP explores a

wide range of topics in mobility, environmental and energy objectives. These reports are intended to provide real life solutions to today's transportation issues. Research panels are made up of professionals in the industry from around the country.

The design of the street is an important element to understand the context of a transit station and its relationship to the community. The street is a vital public space of any community that offers much more than just a means for transportation. The street serves as a vital connection between surrounding buildings and the community. It plays a large role in dictating how people will access and use the transit stations. A successful street design can shape the environment and experience of the area in and around the stations. Understanding the relationship between transit station and the street is an

important element to understand the integration of the station in to the community. A successful street design can not only lead to an integrated transit station but also to more livable communities.

The TCRP explores a wide range of topics in mobility, environmental and energy objectives. These reports are intended to provide real life solutions to today's transportation issues. Research panels are made up of professionals in the industry from around the country.

The design of the street should incorporate all modes of transportation to shape a complete experience when moving through the space. The relationship between these different modes of transportation is vital in the experience of the street. These relationships help to define spatial characteristics and experience one would have when moving through the street.

The National Transportation Research Board identifies five different strategies that create a transit friendly street.

1. Sidewalk Widening

Wider sidewalks allow the sidewalk to be utilized for more than just walking, therefore creating opportunity for social interaction alongside the usual movement of a sidewalk. The width of the sidewalk often depends on the scale of development around the neighborhood. A successful sidewalk design will be divided into different lanes for walking and viewing/social spaces. A desirable walking width for a sidewalk is 8’ while 2’ to 3’ for viewing space.

2. Provide adequate amenities for pedestrians and transit riders

Amenities help to enhance the experience for pedestrians along the street. These amenities are often described as “street furniture.” They include anything from seating, fountains and light fixtures to trees and

planters. The sale of food and other retail elements can help to enhance the sidewalk experience. It is also important to properly site these amenities so they will not interfere with transit services but compliment them.

3. Create priority lanes for transit vehicles

Priority lanes are aimed to maximize efficiency for larger projects by separating the traffic. Priority lanes may not always function as planned.

4. Initiate traffic calming measures for automobiles.

By reducing the speed of vehicles through traffic calming measures it helps to shape a positive environment on the street. The best traffic calming measures are ones that cause little or no delay in transit times but help to reduce the speeds. Such strategies could include road narrowing, changes in road material and mini roundabouts.

5. Redesign intersections and modify signalization.

The intersection and signal modification is important to understand when dealing with mixed modes of transportation. It is important to design the signals to maximize the efficiency of transit between the different modes of transportation.

A transit station can have a large effect on multiple scales in the community. This research attempts to define what makes a design successful on a variety of scales. By looking at a range of scales it gives the design a holistic approach to creating a successful design. This section is an attempt to understand the fundamentals of design that relates to a transit station. This information will help to provide a basic understanding of designing a station and planning the area around it.

3.2 PARK AND RIDES

Park and ride facilities and associated transit services help in making multi-modal travel options more readily available.[16] It allows transfer to a high occupancy mode (i.e.: rail transit, bus, vanpool, or carpool), where travel densities become higher and more supportive of high occupancy mode efficiencies. Park and ride facilities range from multi-story parking garages with customer amenities to simple surface parking lots.

The key objectives for park and ride facilities include the following:

1. Increasing availability of alternatives to driving alone, by providing travelers with the opportunity to readily transfer from lower to higher occupancy travel mode. This opportunity affords an effective combination of passenger collection by automobile or bicycle, with a route travel via rail transit, bus, vanpool, or carpool.
2. Concentrating transit rider demand to a level enabling transit service that could not otherwise be provided. In many low-density areas, without park and rides facilities and service, no attractive public transit could be effectively operated.
3. Offering a convenient, safe meeting point and parking location for carpoolers and vanpoolers, to facilitate pool formation, and to support ridesharing in locations where sufficient demand might not otherwise occur for carpooling to a common destination.
4. Expanding the reach of transit into low-density areas, thereby bringing more riders to premium transit services like rail and express bus. For such services, park and ride users can

[16] Frank, L.D. and G. Pivo. Impacts of Mixed Use and Density on Utilization of Three Modes of Travel. Transportation Research Record 1466: 44-52.

represent a substantial portion of total ridership and induce demand concentration sufficient to warrant the higher quality of transit service.

5. Shift parking away from high activity centers. Thousands of parking spaces for a regions central core may be provided through park and ride facilities.

An overall goal of park and ride facilities is to provide the benefits of transit and carpooling to low density areas in particular while mitigating disincentives of these modes. Related goals may include maximizing the efficiency of the transportation system, increasing the person-carrying capacity of the system, providing more travel options to residents, and enhancing the central environment. In the case of large, non-remote park and ride facilities there is a tension between addressing these goals via park and ride and addressing certain goals associated with Transit Oriented Development.

3.2.1 Types of Park and Ride/Park and Pool Facilities

Park and ride facilities are an integral part of many transit systems in North America, including most medium and large city operations. Park and pool lots are provided along any highway systems focused on urban areas. Park and ride facilities are primarily oriented toward commuters changing from an automobile to a bus or a rail transit system, while park and pool facilities assist with the formation of carpools and vanpools. Access can be accomplished by bicycling, and park and ride facilities may include bicycle storage lockers or racks.

3.3 CASE STUDIES

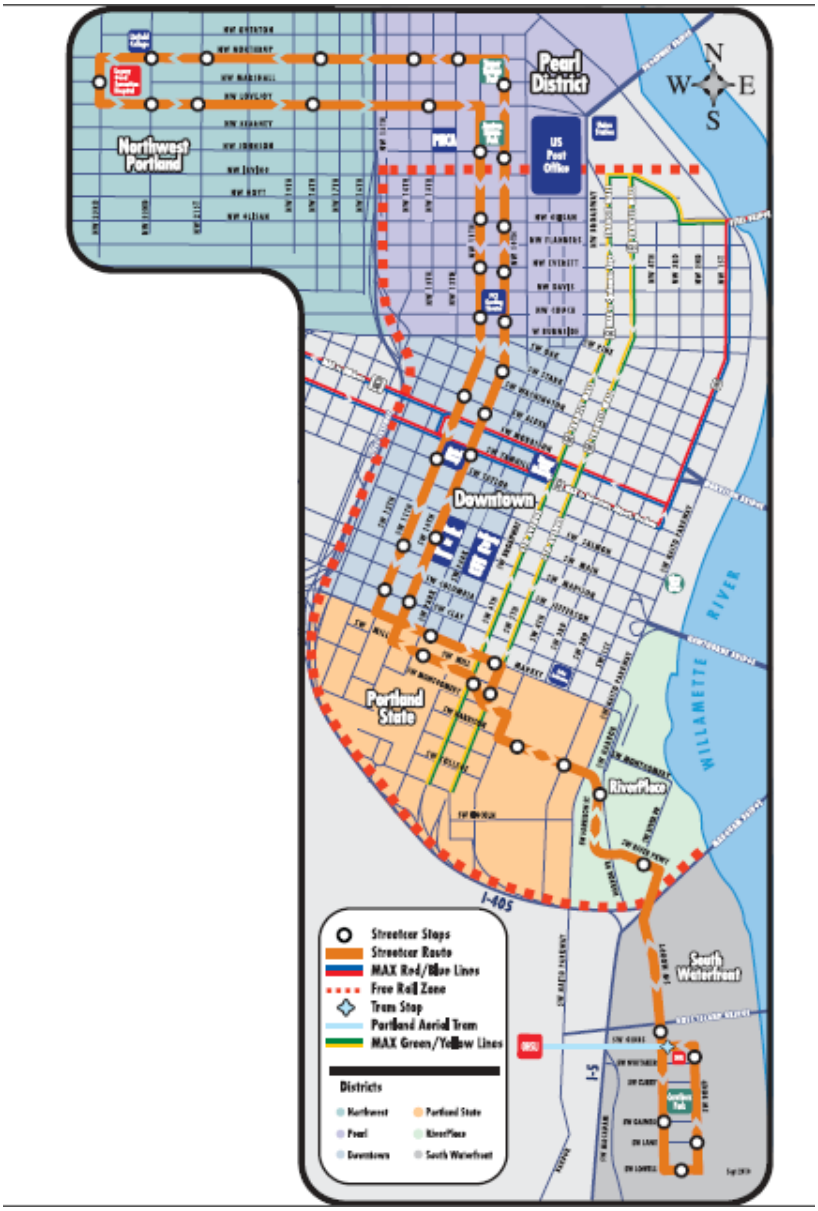
Portland Streetcar System

The Streetcar System Concept Plan (SSCP) is a 20 to 50 year long range planning study that will identify transit corridors in the City of Portland with the highest potential for more detailed analysis in the future.[17] The Bureau of Transportation and the Bureau of Planning and Sustainability, coordinating with Metro, TriMet, and other City bureaus will use this study to look at how transit infrastructure investments can work with pedestrian-oriented, mixed-use development projects to create more walkable and sustainable neighborhoods.

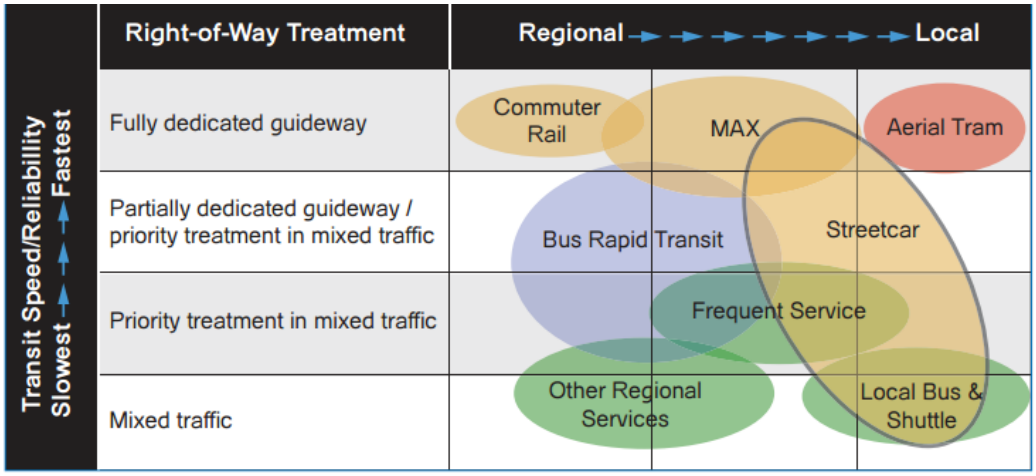
The goal of the SSCP is to identify an interconnected citywide system of streetcar corridors integrated with the City's transportation and land use network.[18] The Portland Streetcar System Concept Plan can play a key role in shaping the City by:

- Reinforcing walkable and economically diverse neighborhoods and vibrant main streets
- Encouraging sustainable and equitable development and infrastructure
- Supporting reduction of vehicle trips
- Supporting greater accessibility, housing options, employment, and economic development

[17] Streetcar Concept Plan. http://www.portlandonline.com/shared/cfm/image.cfm?id=288551
[18] Ibid 17.



Source: Portland Streetcar Route map.
http://www.ctdatahaven.org/know/images/thumb/4/40/NewHaven_Streetcar_Map_Sep10.jpg/245px-NewHaven_Streetcar_Map_Sep10.jpg



Source: Portland Streetcar Route map. http://www.ctdatahaven.org/know/images/thumb/4/40/NewHaven_Streetcar_Map_Sep10.jpg/245px-NewHaven_Streetcar_Map_Sep10.jpg

BART

Source: http://www.bart.gov/

Opened in 1972, 43 Stations

4 Million population

Average weekday ridership: 367,591

Fifth-Busiest heavy rail system in the US

Lessons learned have caused newer

systems to approach TOD differently

3.3 PLANNING TRANSIT ORIENTED DEVELOPMENT IN DISPLACED COMMUNITIES

Kunia
Residents Journey to Work
Road Infrastructure

The Urban Neighborhood: A Sociological Perspective

Suzanne Keller began her research for this book at the Athens Center of Ekistics. She is currently a professor at the sociology department at Princeton University. Her book focuses on understanding the sociological impact on the physical planning of communities. The book discusses in depth the physical and social character that make up a neighborhood. She analyzes the factors that contribute to the development of neighborhood. She then finishes the book with a chapter on the impact of planning neighborhoods and how it affects the residents of the neighborhood. It is important to understand the impact

Designers consider a variety of factors that can increase social interactions in the community beginning with the planning of a community. Two strategies that help to promote an increase in social interactions in the community are to decrease both the physical distance and the functional distance. To decrease the physical distance means to increase densities in an area and to improve accessibility between spaces. By physically reducing the

distances between people it increases the chances that these people will interact with one another. Reducing the functional distance between people implies the grouping of everyday functions and routines of people. Grouping functions together increases the chances that people have "passive" or inadvertent contact with one another through their routine patterns. These activities could range from going shopping at the grocery store to exiting one's home. By designing spaces where resident's paths would cross can help to foster social interactions.

David Sucher's book City Comforts discusses many different factors that contribute to the overall success of the development of a walkable community. He begins his book by introducing a number of elements of design that helps to foster social interactions in the neighborhood. He also introduces three basic rules of developments to create a walkable neighborhood. He discusses many different contributing factors into the design and character of a community. These include getting around, feeling safe and understanding where you are in the city.

a) Elements to Encourage Social Interaction18

"Provide seats" - Seating is one of the basic components that can help to create an inviting city. Seating can sometimes attract the unwanted group of people to the space but by removing the seating you diminish the value of the public space.

"Let people purchase food or drink" - Food can play a valuable role in creating connections and brings people together. By including food vendors in the public realm it can encourage social interactions. Seating around the vendors that are adjacent to the public spaces and sidewalks can also encourage social interactions.

"Offer a conversation piece" - External objects of interest such as artwork can help to spark conversations between strangers in the public realm. These external objects provide some common ground for strangers and shift the focus away from the users.

"Put public space in the sun" - The importance of sun within a public plaza varies between different temperate zones in the world. But one can manipulate the space to offer shade and protection from the sun while you cannot manipulate the sun to your needs so it is important to put public spaces where they are exposed to the sun.

"Build neighborhoods for the social stroll" - The pathways can be a valuable element in the neighborhood that allows people to talk to each other and see others along the way.

creates a sense of departure and arrival. If there is a clear route to walk, people will automatically follow this path and focus on the journey rather than the direction. It is also important that the path is not too long to allow people to make multiple passes when out walking. The width should also be large enough to accommodate multiple users to pass without disruption.

"Put your cards (or chess pieces) on the table" - Card and board games can provide a nonthreatening environment for interaction between strangers. A game can bring people together and play for hours without the added pressures of conversation.

"Build close to the sidewalk" - By simply reducing the physical distances between people it helps to encourage conversations. Seating in close proximity to the sidewalk helps businesses by exposing those passing by to others who have already made purchases.

"Provide a place for music" - Music can help to create a calm environment while providing entertainment for those looking to kill time. Therefore music can help to bring people together without obstructing its surroundings. Large staircases can also act as seating for performance areas below.

"Reclaim and people the parking lot" - By extending functional space out on to the sidewalk and parking lot it creates a more lively space that connects the two functions. Tents or entry awnings can help to create comfortable spaces that make the parking or street experience more enjoyable.

"Build bus shelters with public services" - Small transit stops can also be home to a small newspaper kiosk or an espresso bar or even just a bank machine. These small functions can help to create a more pleasant environment around the station. The shop keeper in the area would become part of the community and social interaction around the station. On top of selling their

product they will inevitably become an informant on bus schedules, the time or even things in the community like lost pets.

"Use sound to permit conversations" - White noise in the background of a public place can help to mask other noises in the city and allow privacy for conversations. Noises like falling water can help to create a peaceful environment.

"Promote growing" - Community gardens where people in the area can lease out a patch of land are great places for people to meet and interact with each other. Community gardens give people in the community the opportunity to grow their own plants as well as learn from others in the community.

"Build in bus stop seating" - By providing shelter and integrating a bus stop with its surrounding buildings, it can create a well-used space in the community.

"Use moveable chairs" - Moveable chairs helps people to develop a sense of ownership on the space because they can manipulate the space to fit their own needs. This allows users to accommodate different situations within the public realm. The facade of the buildings should be "permeable" to connect the interior of the building to the sidewalk. People must be able to see into the spaces as well as access them easily. Doors must be placed in a visible and easily accessed location relative to the sidewalk. Mirrored glazing or other building fenestrations that limits visibility into a space can have a negative effect on the walkability of the area. Being able to see the merchandise and other people using the space will help to attract others to enter the building.

3. ***Prohibit parking lots in front of the building***

Parking is vital to a development but they should be carefully placed so that they do not disturb the street life. People do not usually socialize in parking lots so the street front should be saved for spaces for people instead of cars. Instead of being located in the front of buildings they can be placed above, below, behind

the building or next to it. But on street parking is acceptable because it allows shoppers the convenience of a quick stop and go.

3.4 CHAPTER III SUMMARY

This chapter has discussed a variety of issues that influences social interactions within the neighborhood and in public spaces. These readings will help to provide the foundation to guide the design of the public realm and the transit station. Creating social interactions between the station and the neighborhood is important to integrate the station into the community. The ideas about the neighborhood and public spaces that have been discussed in this chapter help to identify ways to promote interactions within the community. Understanding the various ideas of these writers will play a key role in the design of the social interactions around the transit station.

Social interactions are defined by the people that occupy these spaces and how they relate to their surroundings. A person's relationship to the context of a place is defined by several different factors which subsequently defines social interactions. Designing to encourage for social interactions involves a wide range of factors that can influence ones experience through a site. Designing for social interaction is focused on creating the opportunity for people to interact with one another. A development can provide the opportunity for interaction by providing people a reason to come together. This can be done through the use of the site and the organization around activity that attract the interest and curiosity of people. The environment and its elements can provide the setting for people to interact through the design of physical features and its relationship to its surroundings.

The next section looks at three principles that serve as a guideline to how a development can promote social interactions. These ideas have been extracted and summarized based off of the research done in the previous chapter. The three principles focus on three basic ideas of how the site functions and how they can affect social interactions. The first principle deals with why people come to a place and how activity attracts people to an area. The second principle addresses how people get around in the site and how strong connections can facilitate interactions. The last idea focuses on how people interact when they are in the space and developing places to gather. These ideas focus on large scale concepts which can then be translated into more specific design ideas and applied to the individual projects.

Activity attracts people.

One of the biggest draws to a public place is activity and people.[19] Creating activity within an area can be done through a variety of uses that populate an area. Retail and food venues can help to activate life on the street. Food is often one of the major draws that allow people to gather and interact within a space. Food venues paired with sitting spaces will help to draw people to sit and enjoy their food. People watching other people are one of the most common activities in the public realm so it is important to give people something to watch. It is important to provide adequate space for these activities to occur in the public realm without disrupting the functionality of the space. This refers to public plazas and sidewalks. A balance between circulation and activity is important to ensure the success of both activities within the site.

A new transit station will attract a higher traffic into the site where it does not currently exist. This higher traffic does not necessarily translate into an increase in social interactions around the area. The types of activities that are associated with transit such as waiting are not very social activities. Other activities located around the transit station can help to compliment the station and promote more interactions. A diversity of uses can help to stimulate activity in the area and encourage interactions. The circulation of transit riders can interact with the surroundings to promote diversity within the site.[20]

Public Realm as a Place to Gather

Throughout all of the research one of the common goals is to create a space for people to gather. The public realm that connects a community provides

[19] Belzer, Dena and Gerald Autler. Transit-Oriented Development: Moving from Rhetoric to Reality. Great American Station Foundation and Brookings Center on Urban and Metropolitan Policy. http://www.transittown.org.

[20] Ibid 19.

numerous opportunities to interact with people if they have the spaces to gather. Creating gathering spaces in the community is more than creating open plazas and wide sidewalks. A gathering space can bring people in the neighborhood together and help to develop a sense of community.

The Project for Public Spaces describes different elements to creating public spaces that can attract people.

One of the most prominent elements that were identified in much of the research was the need to provide adequate seating. By providing seating in the public realm it creates functionality to the space. Seating creates the opportunity for a range of different interactions while allowing people to linger within a space and gather. Seating can also be a complimentary element that feeds off of the other activities in the area. Seating is an important feature in creating lively and successful public gathering spaces.

An important element of creating usable seating options is to provide a range of options to accommodate different users. Movable seating provides user with a sense of control which allows people to manipulate the space to fit their individual needs. Integrating seating with the surrounding building and functions is important to creating social interactions. One strategy to integrate seating into the public realm is to create a semi-public space for seating that creates an intermediary zone that connects exterior and interior spaces.

A gathering space is not only important in creating social interactions but it is key to integrating a transit station into an existing community. A well designed gathering space can create an intermediary space that integrates transit riders with the surrounding area. For transit riders plazas around the station create spaces to orient themselves in the space or use it to meet people. For others a gathering space can be a place for leisure or just a circulation element to and from a building. But no matter what you use it for these gathering spaces are key elements to bringing all these people together.

Integrated Experience of the Site

When looking at how social interactions are created in a community you must understand the relationship of all the elements that make up the area. This relationship

shapes the public realm and becomes the stage for social interactions. A well designed public realm should encourage an integrated experience of the community. Providing physical and visual connections can help to promote social interactions in the public realm.

Providing physical connections is an easy and effective way to promote social interactions in the site. Physically connecting the site through a network of paths provides the opportunity for users to encounter different people in the community and help foster social interaction in the site. These paths are not just connections but a vital public space that should be designed for social interactions.

Mixed use developments introduce multiple user groups into the development but the arrangement of these different uses dictates how these users will interact. The circulation paths of different user groups should be considered in the layout of the development to encourage interaction. The circulation path is an opportunity to expose users to different uses and people along their journey. The layout should understand how the users of one group can be exposed to other functions within the site as well as different user groups within the site. Bringing together different user groups will help to promote new social interactions that may not occur naturally. New interactions between different user groups of the site will help to increase social interactions but it will also benefit all the different uses in the site by expanding users within the site.

Along with developing physical connections in a site it is important to establish visual connections within a site. Visual connections can be just as important to bringing the site together. Visual cues or nodes can help to draw users through a site to expose them to a larger area of the community. By promoting a higher circulation in the area it expands the opportunities for social interactions. Visual

continuity within a site can create an continuous experience of the site that spans multiple buildings in the neighborhood.

One of the simplest ideas of improving social interaction is to improve visibility and increase exposure in the site. People cannot interact with people they cannot see.

The street life should be visually connected to the building uses and public spaces. These spaces should complement each other through visual connections. By connecting these spaces visually opens up the possibility of social interactions to occur. High visibility not only increases the chances of random interactions but also encourages

V

DESIGN CONTEXT

IV. DESIGN CONTEXT

4.1 PROGRAM

To create a neighborhood TOD in the proposed main shuttle/bus stop in Kunia. The site was selected based on factors of adjacent amenities and proposed bus routes for the future. The site shall be developed into a substation that would serve the needs of the community through the implementation of a community/culture center and incubator space.

Community/Cultural Center

The purpose of the community/cultural center is to serve as a place for neighborhood meetings, birthdays, educational field trips, etc. Other than use of the school facilities, Kunia didn't have its own community space.

Incubator Space

Being a long time resident of Kunia, a trend had occurred to me. While driving around the neighborhood, I noticed there were an abundant amount of small business owners offering many mobile services such as repair, handicap transit, landscaping, maid service, etc. This triggered an idea of incubator spaces as a need for the community. The spaces could be rented out for a low cost based on eligibility and used for a few years until hopefully opening their own store front.

A great example of this idea is the Manoa Innovation Center. The Manoa Innovation Center, located near the main research campus of the University of Hawaii in Manoa Valley, brings together the best of Hawaii's intellectual and physical resources. MIC's primary role is to serve as an incubator for new and early-stage technology companies. Tenants enjoy advanced connectivity, state-of-the-art facilities and shared support services. MIC began its eighteenth year of operations in 2010, facilitating the growth of technology companies by providing

business development services, synergistic and strategic partnerships, networking activities and professional marketing opportunities.

Along with MIC, there are also many fashion incubator spaces in the Kaka'ako and downtown areas.

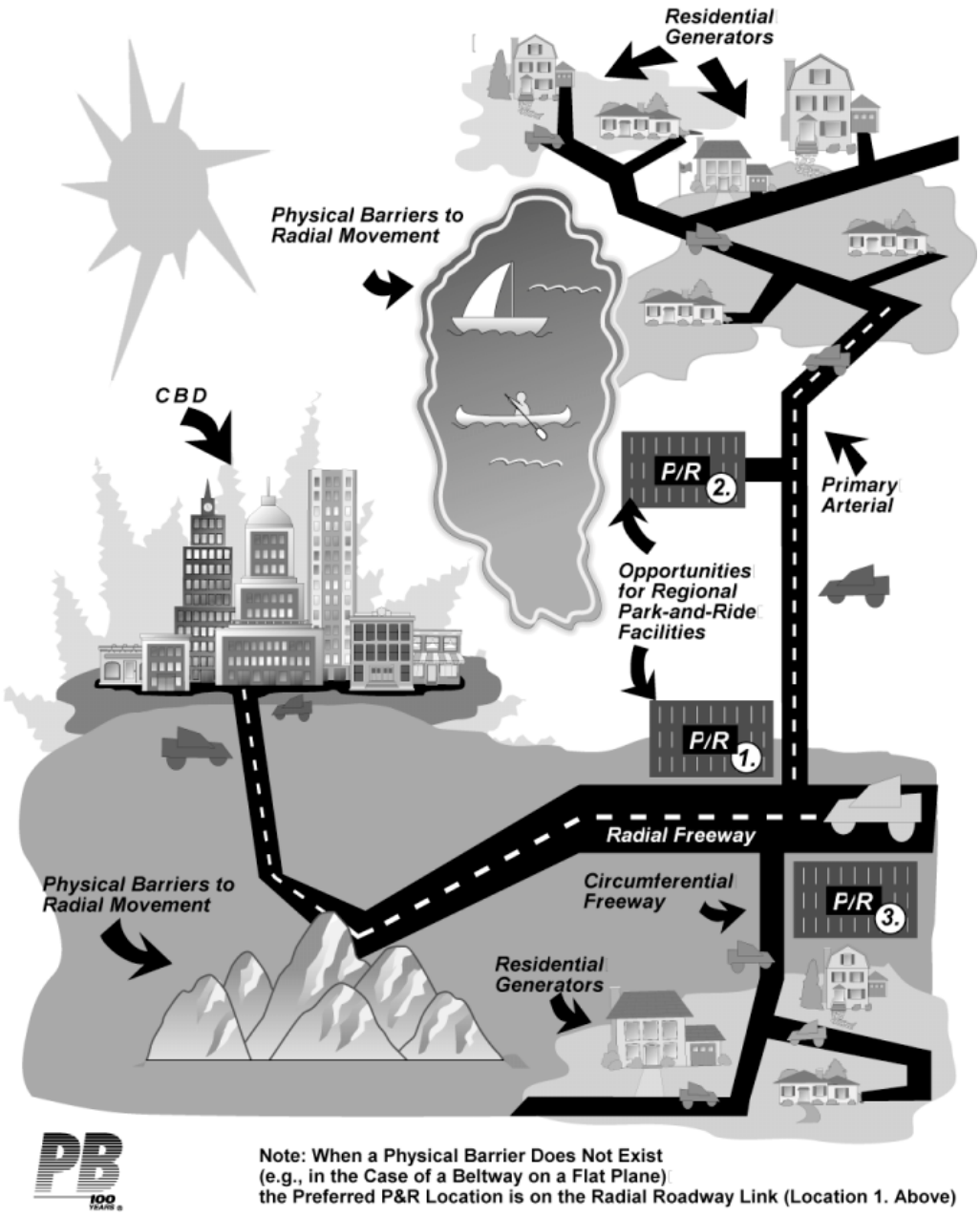
4.2 PARK AND RIDE DESIGN GUIDELINES

As mentioned in the Waipahu Livable Communities section, 48% of Waipahu residents would use a park and ride in 1997. As a longtime resident of Kunia, the park and ride within the community has not been used to its fullest potential. This section was developed so the author to understood how successful park and rides have been made.

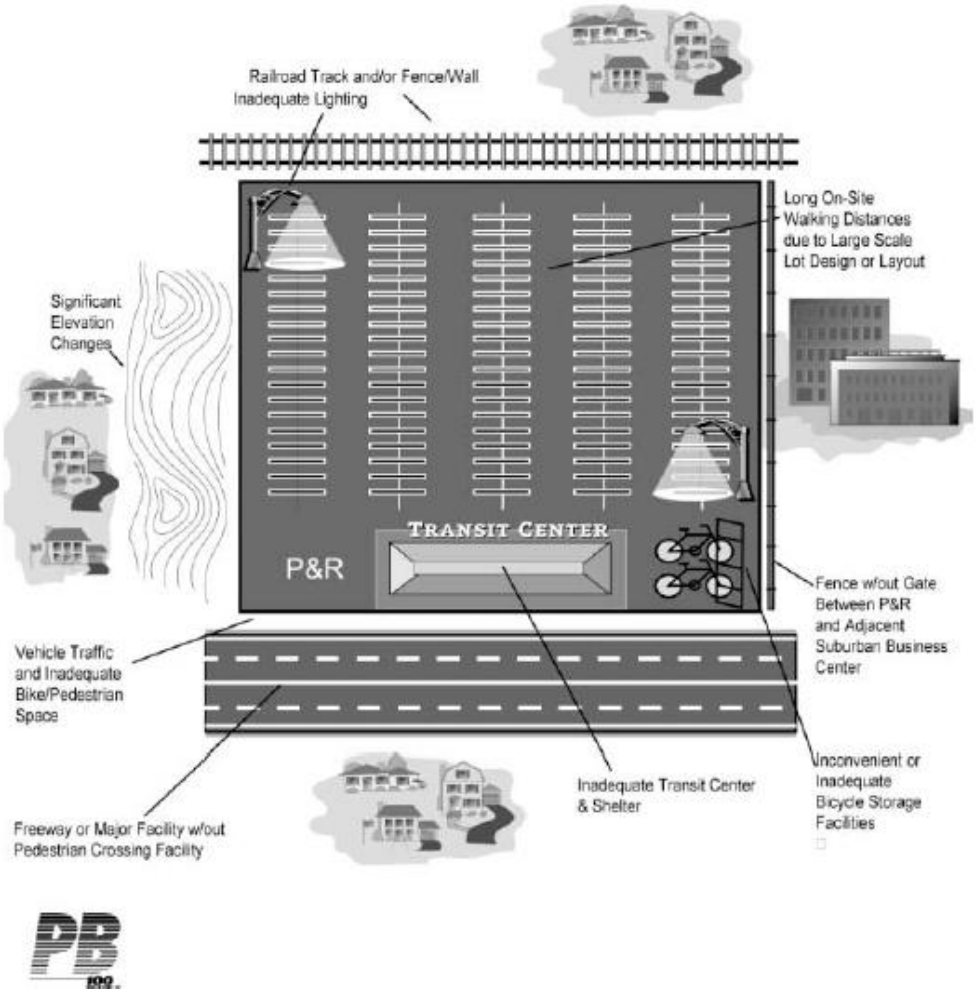
In the United States and Canada, park-and-ride lots have traditionally been designed for the purpose of primarily serving the work-oriented commute trip. Communities in Great Britain have turned to park-and-ride facilities as a means for reducing traffic within their historical town centers and providing convenient services to shoppers and tourists gaining access to their CBDs. The role of the park-and-ride facility is rapidly changing. In congested urban areas, new interest in park and ride facilities is coming from both the private and public sectors. For example, in the Puget Sound region, one developer proposed to build parking structures at approximately 20 existing regional park-and-ride facilities, with the intent of charging for premium park-and-ride services. Another example of the new interest in park-and-ride facilities is an innovative study in San Jose, California, to link the development of new park-and-ride facilities with emerging intelligent transport technologies, creating a “smart lot.” This new public and privately generated interest is generating a host of innovative concepts and opportunities in park-and-ride planning and design. One notable change on the horizon is the increasing move to package new park-and ride facilities with urban

developments and gain spin-off value from the investment. Some agencies are now even turning to the private sector to provide the needed parking capacity. Transit agencies with mature operating park-and-ride systems are looking towards their capital assets to find additional sources of revenue. Park-and-ride facilities, by their nature, represent capital-intensive assets that can be leveraged in the market place.

The changing role of the park-and-ride facility and the variety of environments in which they are built reaffirms the need to approach every planning or design project with an eye for innovation and optimization. In short, the park-and-ride facility can be whatever the community is willing to make of it, an integrated part of the urban fabric or a single use facility.

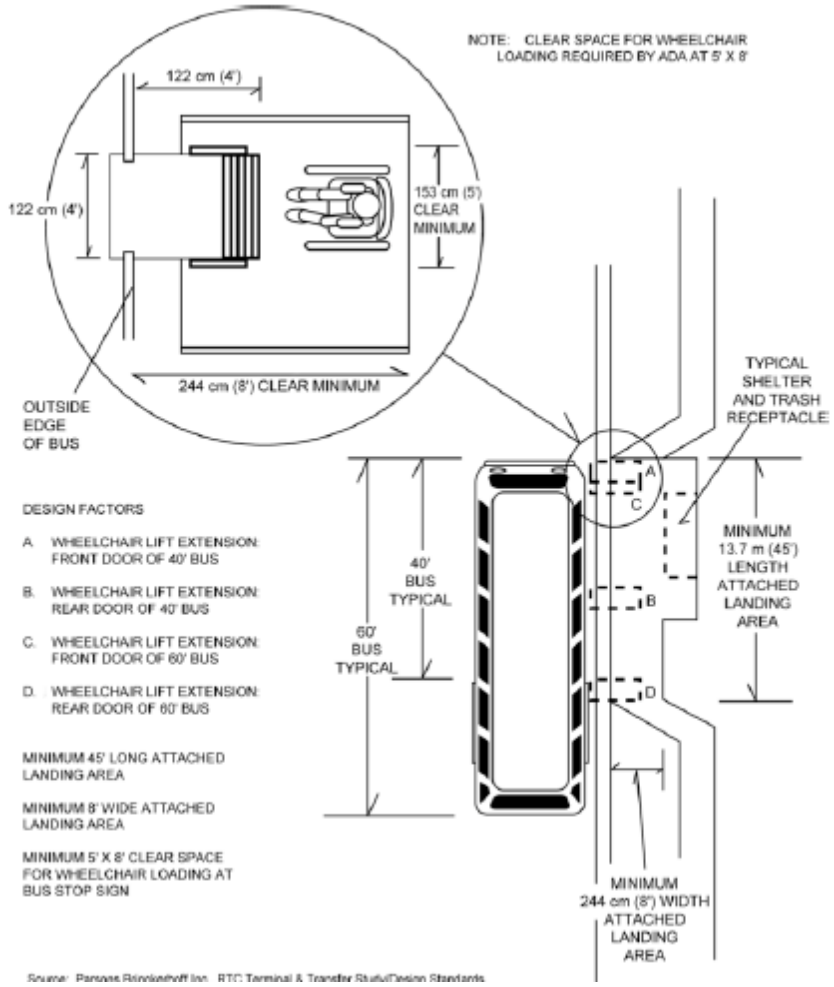


Source: Transit Oriented Development Map. http://gis.drcog.org/todmap

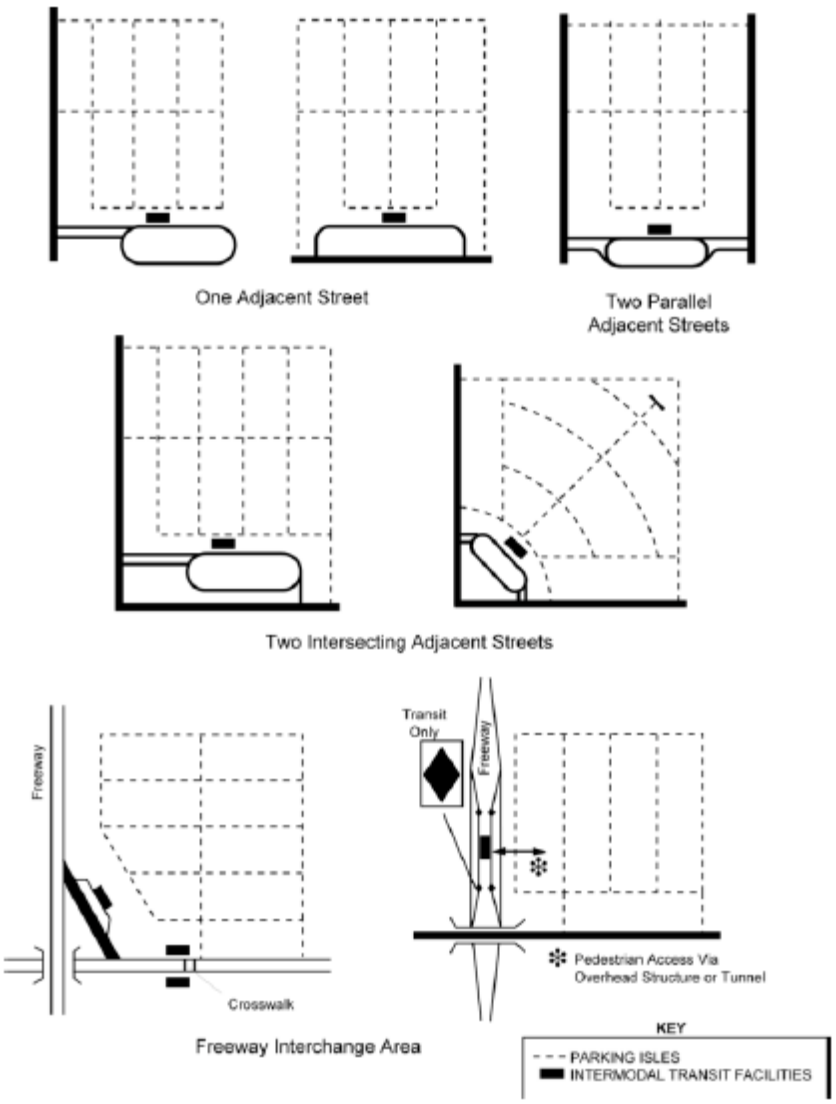


Source: Transit Oriented Development Map. http://gis.drcog.org/todmap

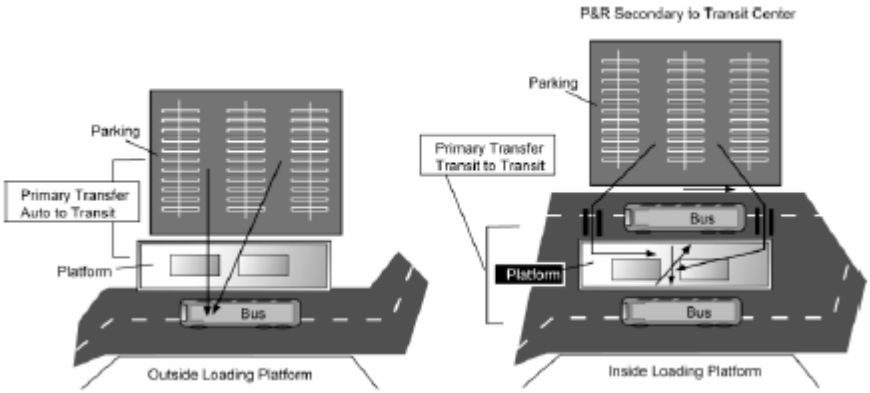
Some common barriers that pedestrians and motorists face are pictured above and should be avoided.



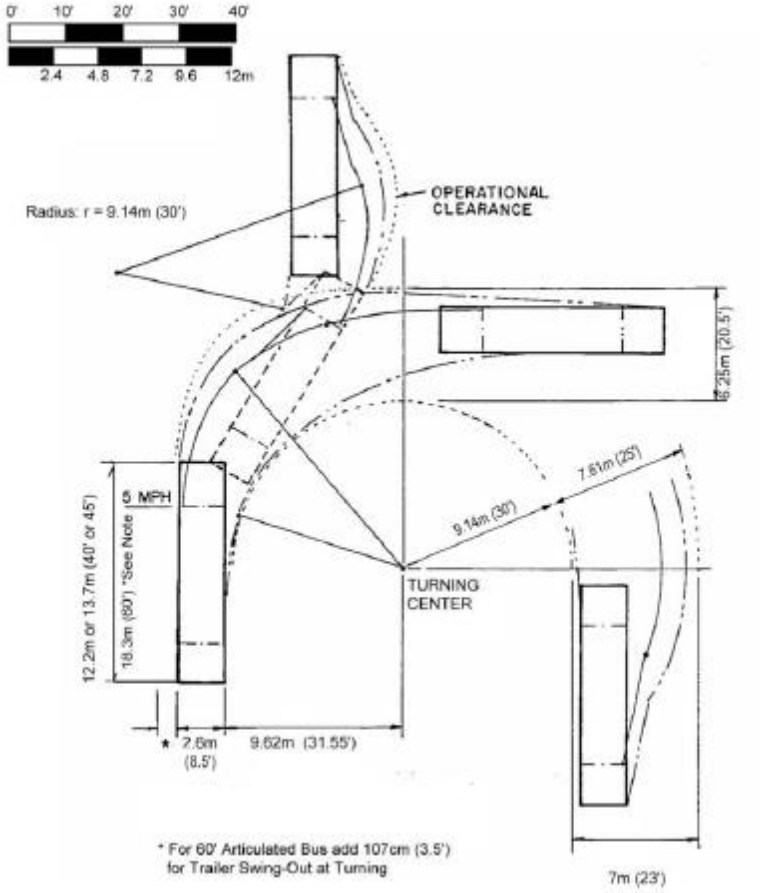
Typical landing area and bus dimensions are noted in the diagram above.



Prototype park and ride facilities based on street grids.



The passenger loading area can be done is various ways, but the two most used and successful ways are labeled in the diagram above.



It is important to note that the turning radius for buses at 5 mph must be no less than 30', as pictured above.

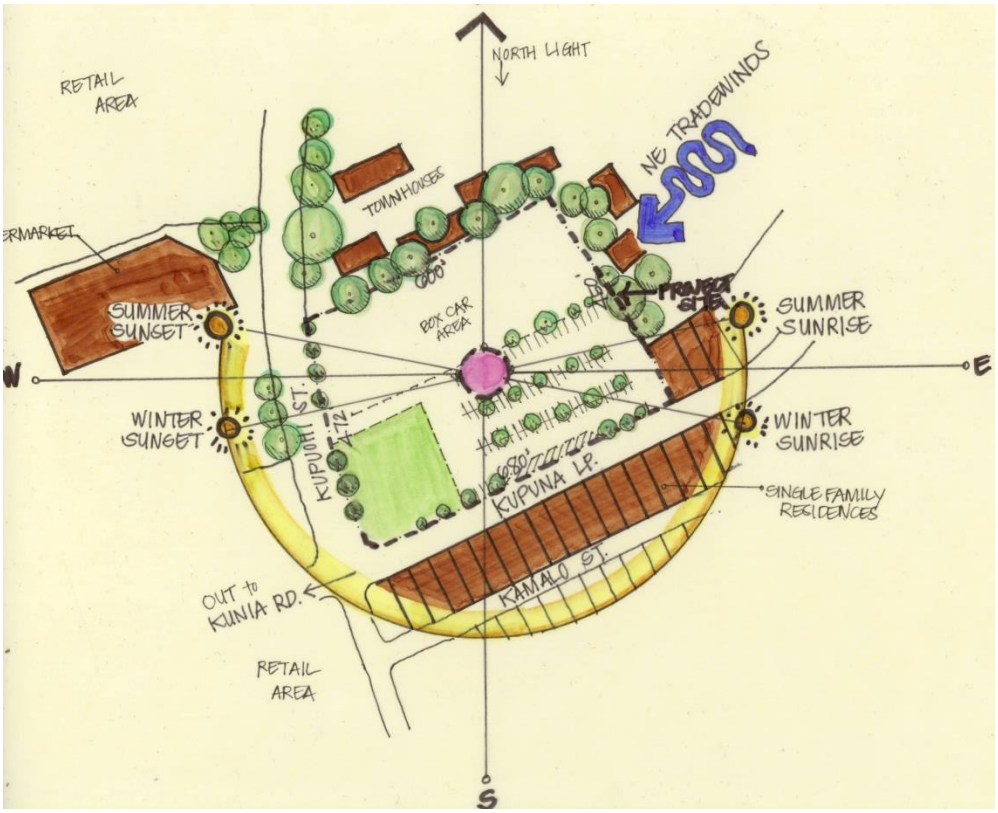
4.3 SITE ANALYSIS

The site currently serves as Kunia's park and ride. It is also used for Saturday farmers markets and recycling services. The back of the site is used as a racecar track for children by a non-profit organization. According to the Honolulu GIS website, the site is categorized as Kupuohi Neighborhood Park. From the longtime residents' point of view, this site is definitely under-utilized and

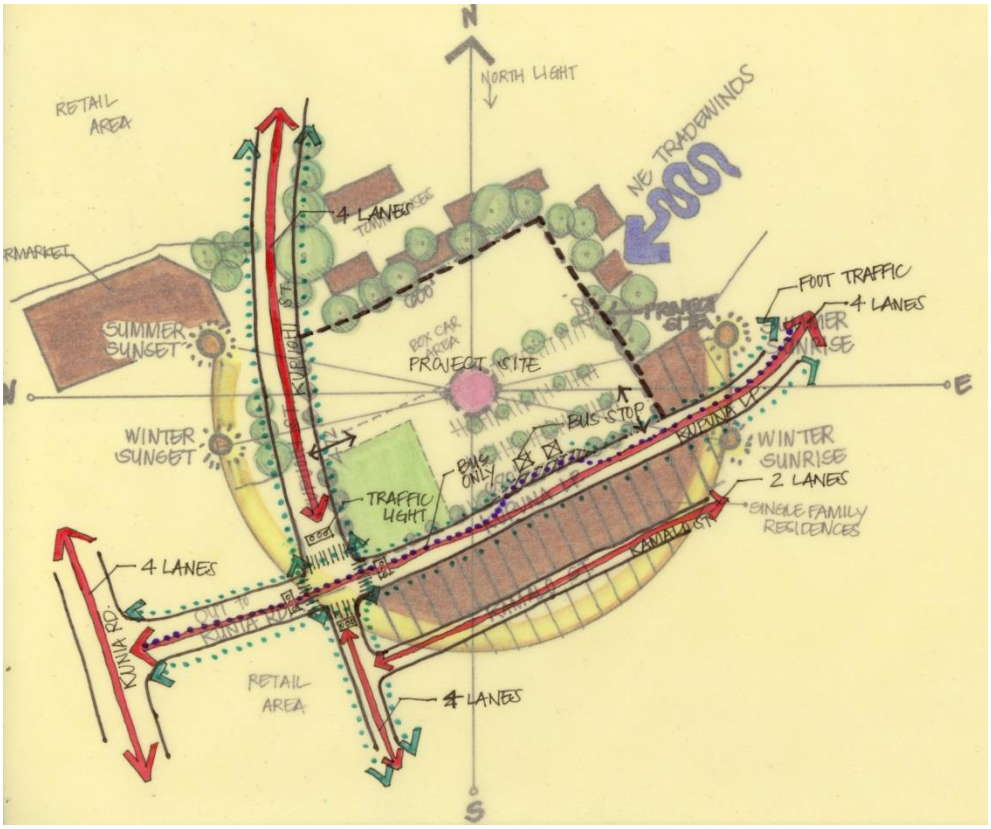
has the potential for development, considering its location is ideal. It's nestled between residences and commercial spaces (as shown in Figure 9).

Source: Diagram illustrating the transit connections from Kunia to the main rail line in lower Waipahu. (Google Earth & Author)

Source: Diagram illustrating the transit connections from Kunia to the main rail line in lower Waipahu. (Google Earth & Author)

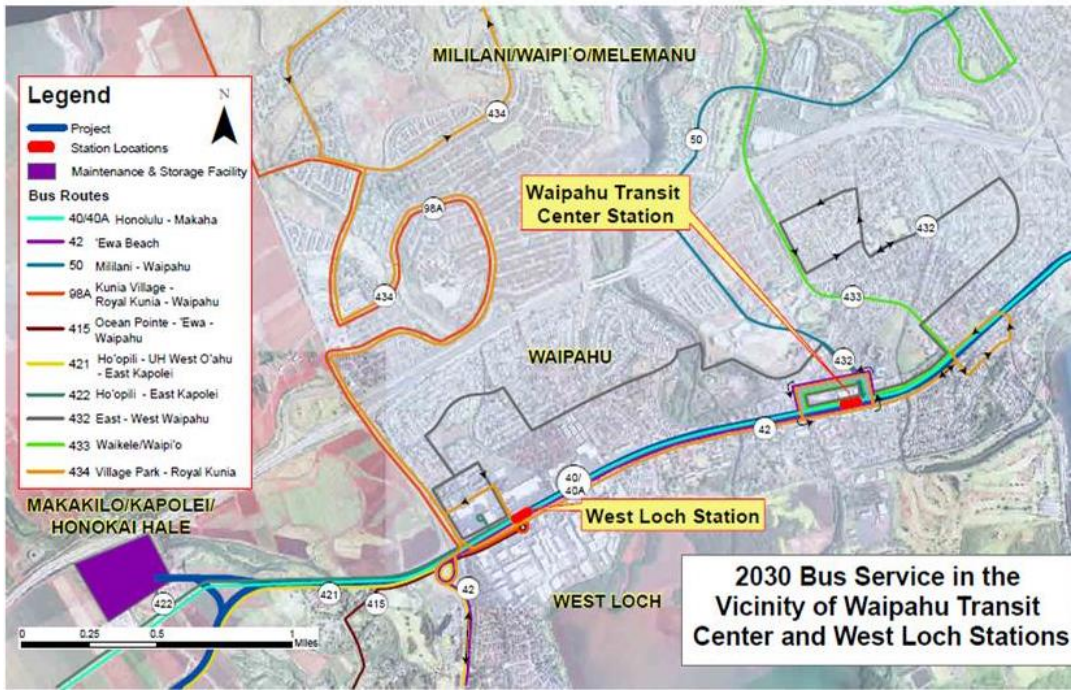


Source: Author



Source: Author

Village Park – Royal Kunia (orange & light orange lines)



Source: (HART.org) Proposed 2030 bus routes in the Waipahu Transit and West Loch station radius.

Source: City & County of Honolulu GIS Mapping. Accessed 4/13/13.

Existing state of the community

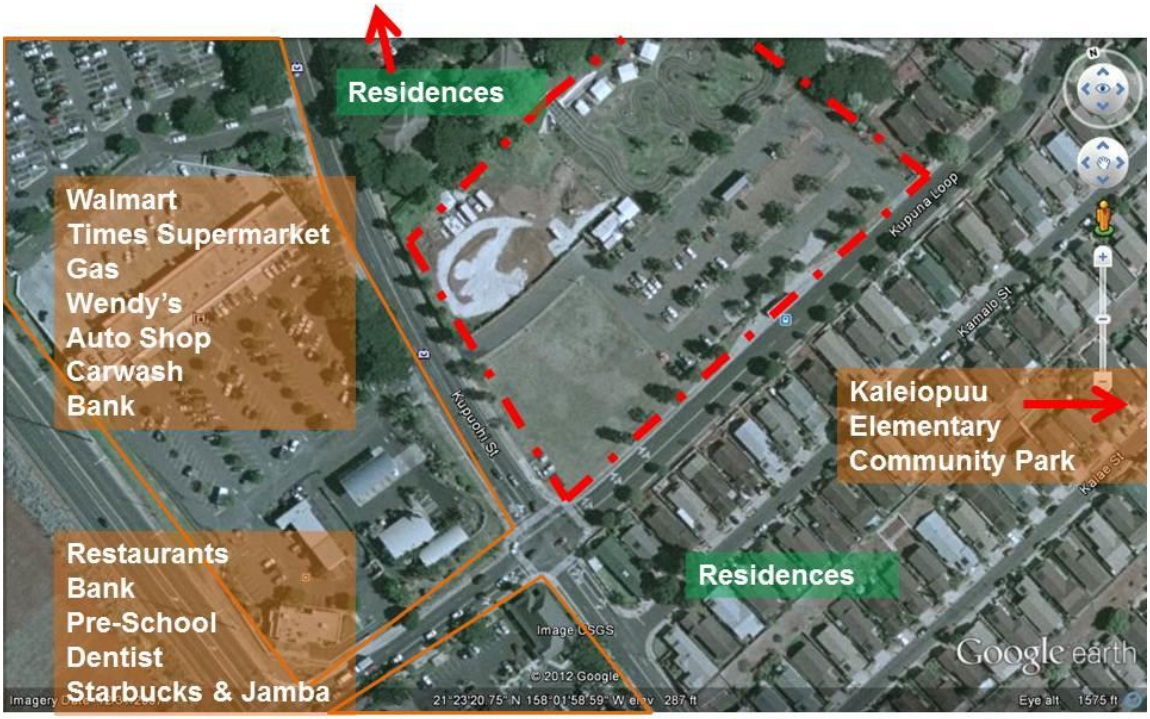
In order to understand the full picture of Kunia's connection to the main rail line, we must investigate the proposed rail location. Waipahu will be the site

for two stations on the proposed elevated rail line. Both stations are located on Farrington highway. The introduction of a new station into the historic neighborhood offers many interesting new design opportunities. These new stations will change the dynamics of the community by changing circulation patterns. The first station is the West Loch station which is located near the Waipahu Town Center Shopping Center. The second station is the Waipahu transit Center and is located further down the line.

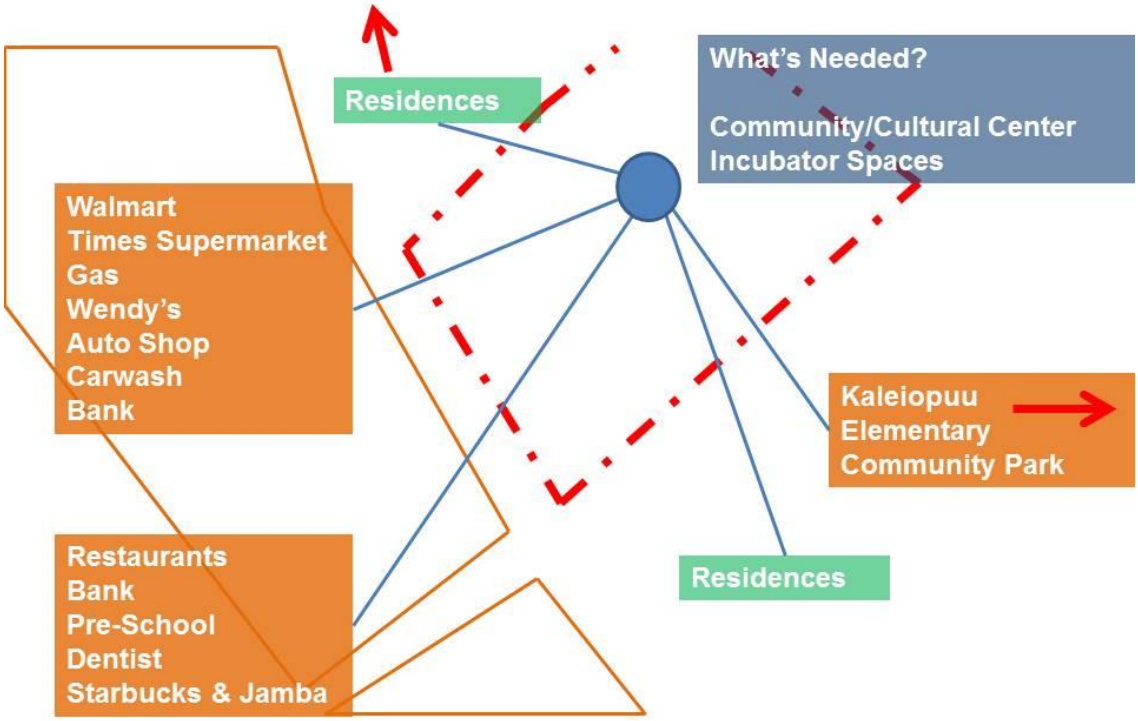
The first step to understanding the impact of a new station is to understand the existing neighborhood.

Waipahu's history dates back to the beginning of the 19th century as a plantation40. The historical beginnings are remembered at Hawaii's plantation Village which lets one experience a historical plantation village. Today the total population of Waipahu is 33,108 people with an average household income of $49,4444. The population is composed of a wide mixture of nationalities. Waipahu also features a variety of parks for the community including Hans L'Orange Baseball Park, Waipahu Cultural Garden Park and Honowai Neighborhood Park. Along with a diverse residential population Waipahu also features multiple shopping centers along Farrington highway. Farrington highway serves as a major retail corridor with office and industrial uses also lining the highway. Waipahu offers a diverse population along with a diverse mixture of uses to compliment a predominantly residential district. The existing neighborhood and history of Waipahu create a unique character.

The existing neighborhood is predominantly dominated by cars centered around a major artery in Farrington highway. The highway is 4 lanes wide with a median creating a great division within the community. There are sidewalks along the main road but the lack of activity on the street discourages any pedestrian activity on the area. There are a few disconnected bike lanes in the neighborhood. Bike lanes could help to create a strong connection from the residential neighborhood to the stations. The bus services are heavily used in the area and can help to compliment a new rail transit station.



Source: (Google Earth & Author). Diagram showing the Park and Ride site in red with adjacent amenities.



Source: (Google Earth & Author). Diagram showing the Park and Ride site in red with adjacent amenities.

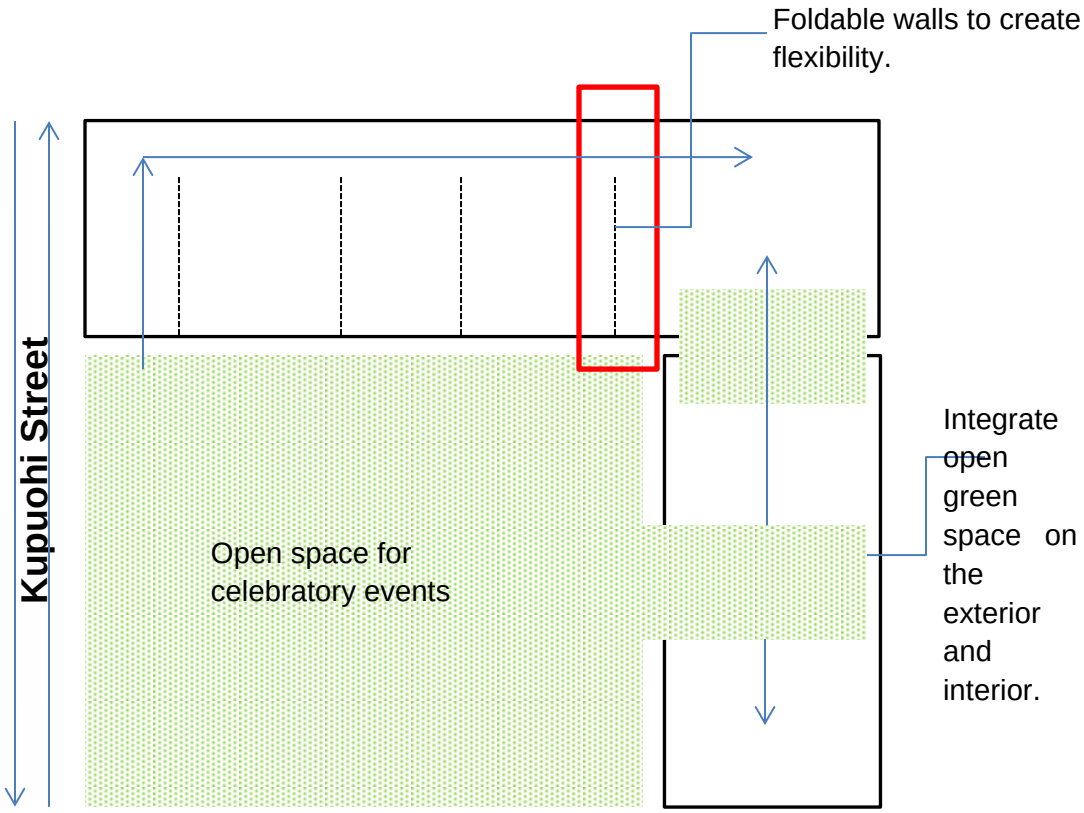
Source: (Google Earth & Author)

Source: City & County of Honolulu GIS Terrain Map. Accessed 4/13/13.

Source: City & County of Honolulu GIS Birds Eye Map. Accessed 4/13/13.

4.3 SCHEMATIC DESIGN

Source: (Google Earth & Author). Initial Concept. The blue boxes indicate the proposed community center and incubator center (not to scale).



Source: Author. Schematic layout of proposed (top) incubator space and (right) community center (Floorplan)

The green space could be used as a shared gathering space for celebrations. The green open space remains as the focal point of the space. Its relationship to the incubator space and community center should be an extension of the building and act as a glue between the buildings.

This project proposes that the incubator space takes on a grass roots approach for local non-profit organizations, for example, the Waipahu High School student pathways. The vocational program offers career pathways which are broad groupings of career specialties/occupations that have common skills and knowledge. Career Pathways provide a way for exploring career options at

all levels of education and a framework for linking learning to the skills and knowledge needed for future success.[21]

Career pathways provide curriculum standards that meet business and industry requirements. Implementing these standards will ensure student attainment of a high level of academic and technical skills and a seamless transition from secondary to postsecondary education as well as a satisfying career.

The career pathways are as follows:

Arts and Communications

Careers related to the humanities, performing, visual, literary, and the media arts: career such as architecture, interior design, creative writing, fashion design, film, fine arts, graphic design & production, journalism, languages, television, advertising, and public relations.

Business, Management, & Technology

Careers related to the business environment; careers such as entrepreneurship, sales & marketing, computer information systems, finance & accounting, human resources, economics and management.

Human Services

Careers related to economic, political & social systems: careers such as education, government, law & law enforcement, leisure & recreation, military, religion, child care, and social services.

Health Services

[21] Waipahu High School website. http://www.edline.net/pages/waipahu_high_school

Careers related to the health field and the treatment of illness/disease: careers such as medical research, prevention, treatment & cure, and related medical technologies.

Industrial & Engineering Technology

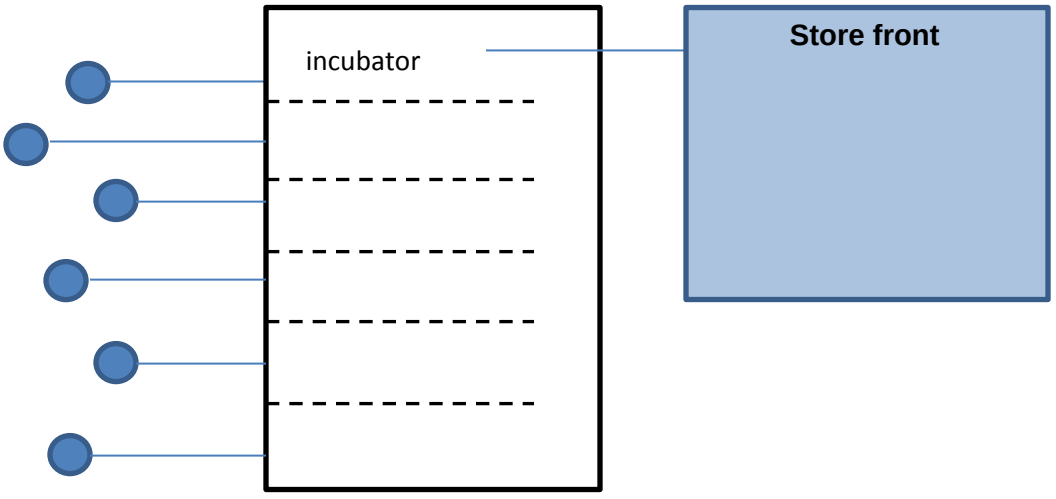
Careers related to the industrial technologies necessary to design, produce, and maintain physical systems: careers such as engineering, manufacturing, construction, and other technologies.

Natural Resources

Careers related to agriculture, the environment, and natural earth/environmental sciences/technologies, fisheries, forestry, wildlife management, and horticulture.

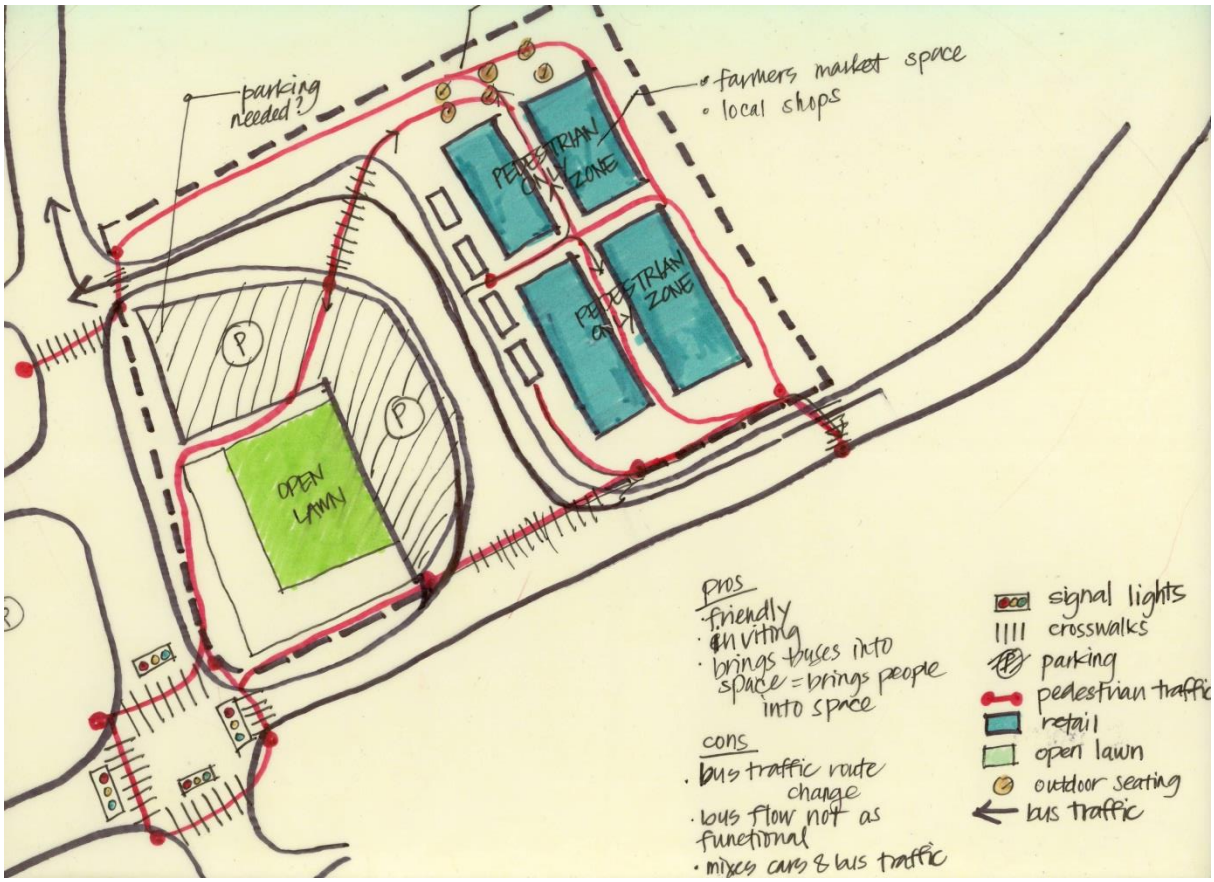
How Do The Pathways and Incubator Spaces Relate?

Students that are interested in a certain career path could potential rent out a space in the Kunia incubator center to kick start their business. This tie between a communities young entrepreneurs and to offer a space for them within the district could provide great opportunities for them. Also, since Waipahu High School is located along the main transit line, the students could catch the rail to the Kunia Park and Ride, providing convenience to and from class to work.

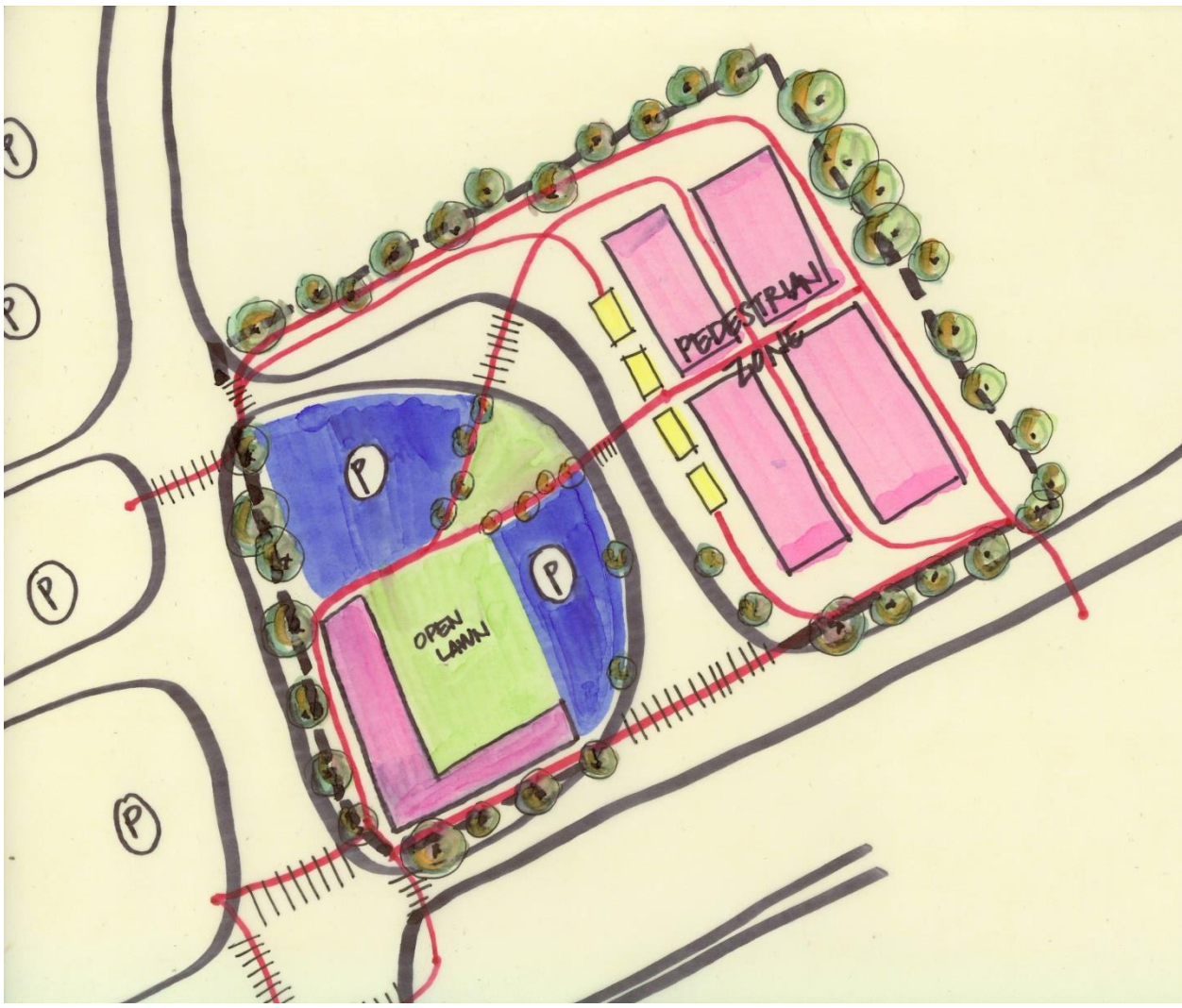


Source: Author. Diagram illustrating how the career pathways can grow from an incubator space to a store front.

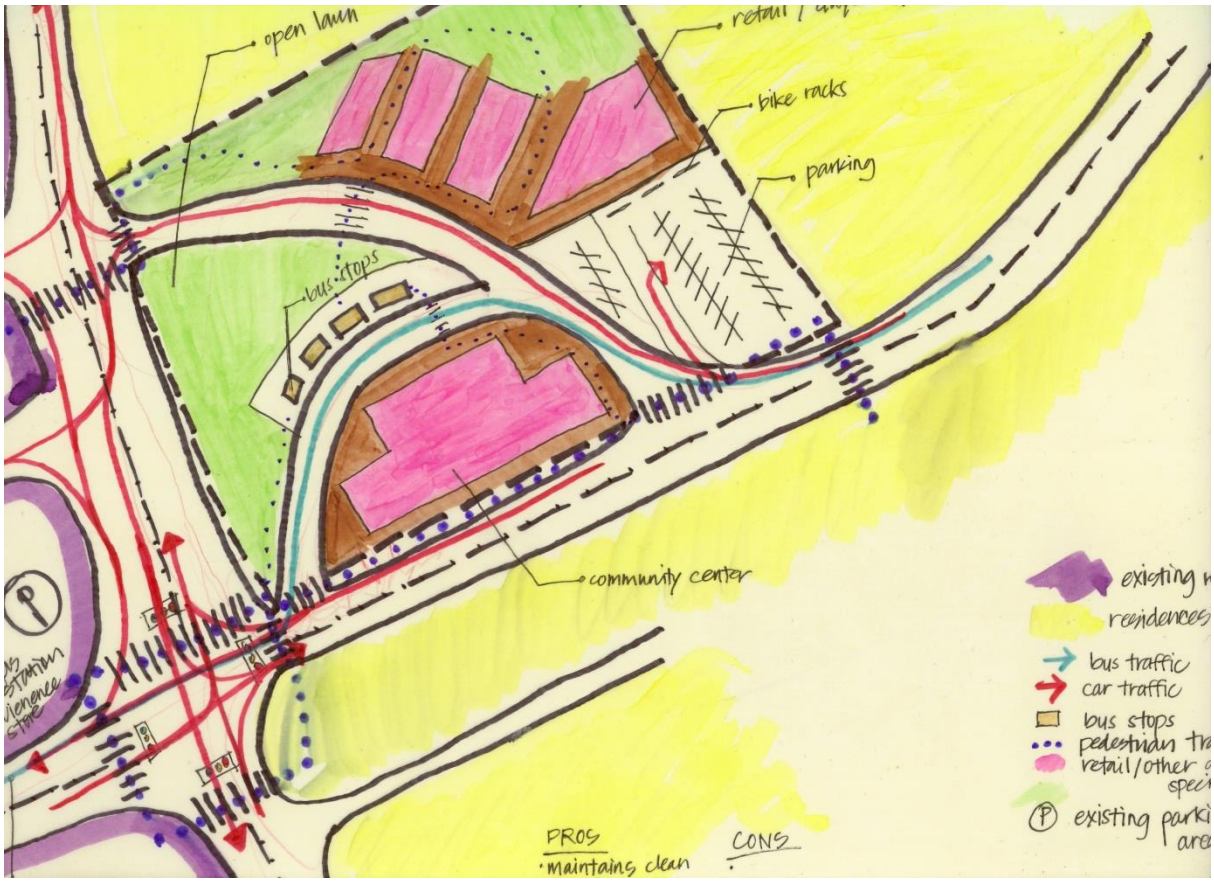
Source: Author. Existing green spaces.



Source: Author. Proposed zone areas with current circulation paths.

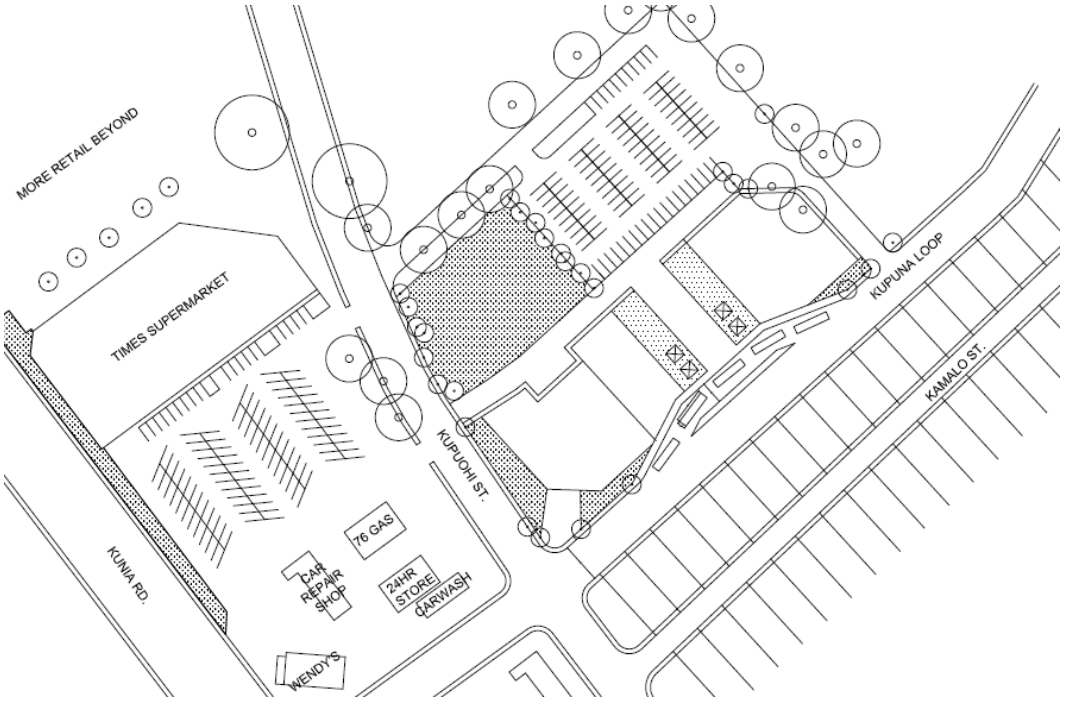


Source: Author. Concepts in progress.

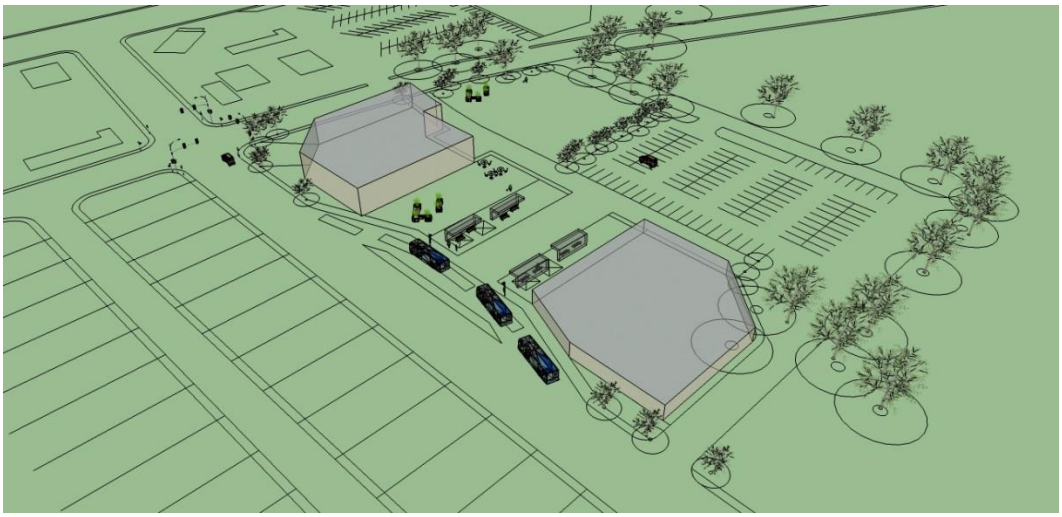


Source: Author.

The drawings above investigate the areas existing zones with proposed areas for the park and ride site.



Source: Author. CAD Site Plan.



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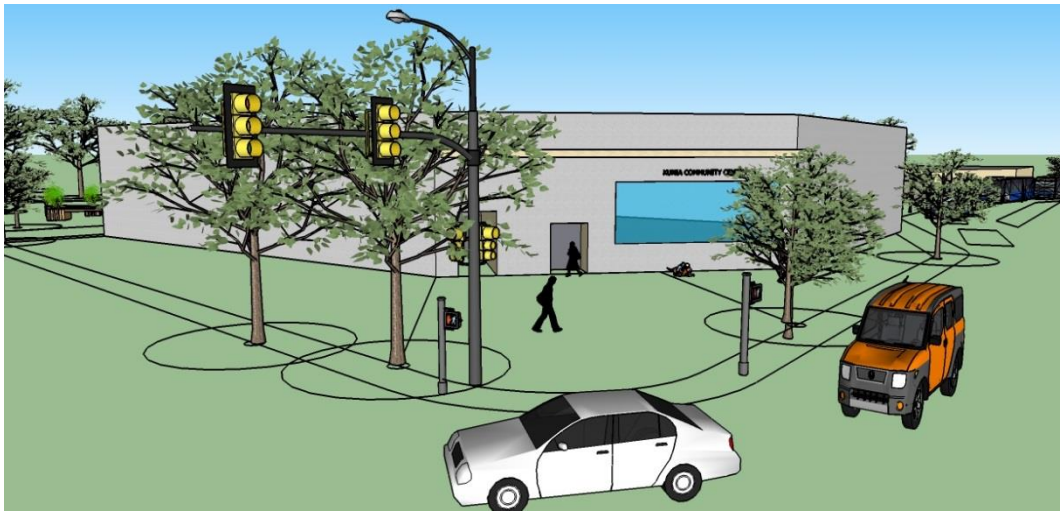

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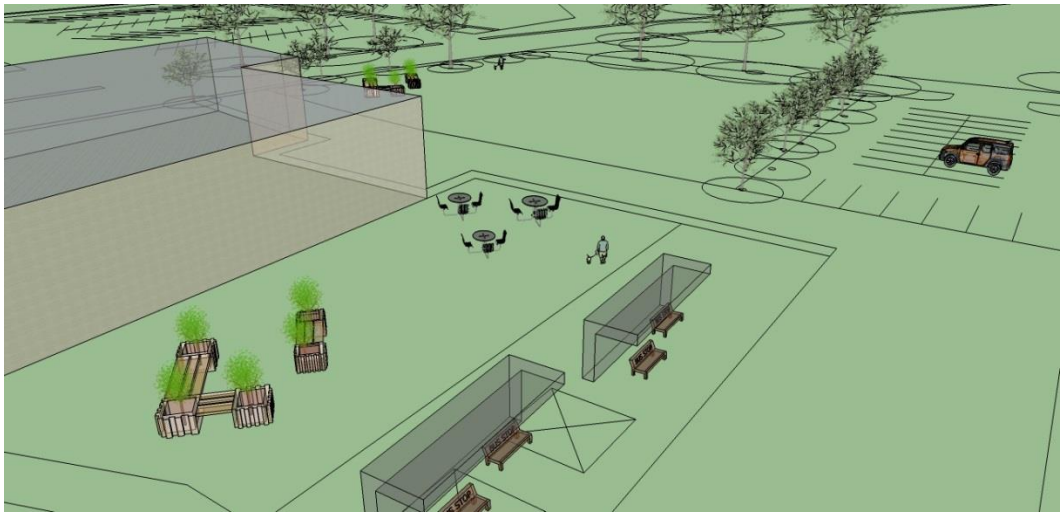
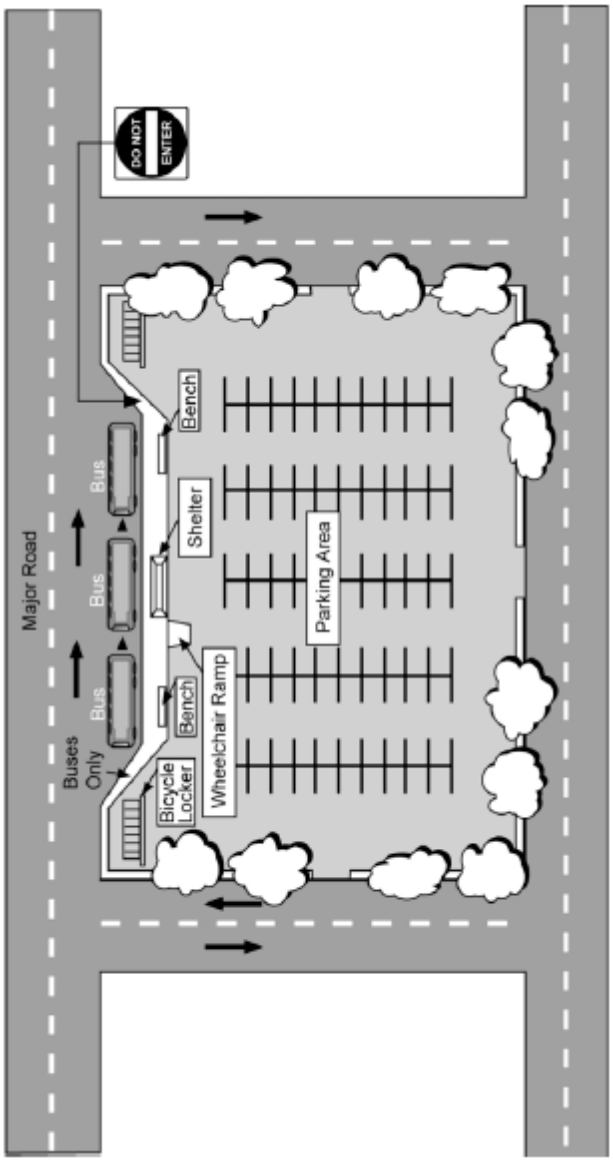


Source: Author.



Source: Park & Ride Mapping, 2007.

The plan above is a diagram that represents an increase in the bus stop area by added room for (1) more bus. Bicycle and wheel chair ramps have been located and roadways have been revised to create a safer area.

The next step is to bring back the character of Kunia's rich history of the plantation into the architectural components of the site. As mentioned in the

VI
CONCLUSION

Waipahu Town plan, the plantation era embodies the community culture of Waipahu and Kunia, and should be maintained.

V. CONCLUSION

The future of Oahu's transit project should not neglect any communities and should connect them through feeders within a close radius of the main transit line. Transit Oriented Develop is about creating a network of great neighborhoods—places where residents of diverse incomes, ages, and backgrounds have the option to walk to nearby shopping, parks and schools; where streets are safe to walk along and public spaces are beautiful, inviting and frequented; and where people can choose to take a train or bus to their destinations as easily and conveniently as a car. The typical definition of TOD is purely descriptive; a mix of uses, at various densities, within a half-mile radius around each transit stop. Though the dimensions of TOD are well documented as the distances people are most likely to walk for a commute trip, there still remains little clear evidence that a prescribed set of uses or densities will deliver sufficient riders to support functioning transit systems.

There must also be a better understanding of what TOD projects can and should accomplish, how the goals must be aligned, and what the decision-making and development process entails. Using Kunia as an example, the author has identified the qualities of Kunia, by reinforcing that the fabric of a community hasn't been lost, but rather, built upon.

VII
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VI. BIBLIOGRAPHY

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APPENDICES

WAIPAHU NEIGHBORHOOD T.O.D.

HONOLULU, HI

Two Diverse Mixed Use Neighborhoods That Respond to a Future Elevated Transit System

DESCRIPTION Waipahu Neighborhood T.O.D. is two community plans for the siting and future urban redevelopment adjacent to the planned elevated fixed guideway transit system for the island of Oahu. This culturally diverse neighborhood is an historical plantation center. Waipahu is located just north of Pearl Harbor on Farrington Highway between the fast-growing Ewa region and the primary urban center. The community plans embraced two dynamic yet very diverse neighborhoods of Waipahu, Mokuola Station and Leoku Station. The 160 acres surrounding the future Mokuola station is the historic core of the past plantation town, and is home to many cultural sites and facilities. The 160 acres surrounding the future Leoku Station is the retail and employment center of Waipahu. Both are being planned for future infill, mixed use development.

VISION Spur community interest and involvement in the city's tremendous investment in a state of the art transit system.

DESIGN FEATURES

- Reconnecting the existing urban fabric to the waterfront.
- Providing appropriate land uses to respond to the planned elevated fixed guidway transit system.
- Embracing the diversity of two distinctly different neighborhoods.

Client: City and County of Honolulu

Project size/acres: 320 acres

Density: Additional 4,300 homes and 400,000 sf commercial

Completion: To be determined

Construction est.: To be determined

Contact:
Dina Wong
Project Manager
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813
808.768.8000

AIEA-PEARL CITY NEIGHBORHOOD TOD

OAHU, HI

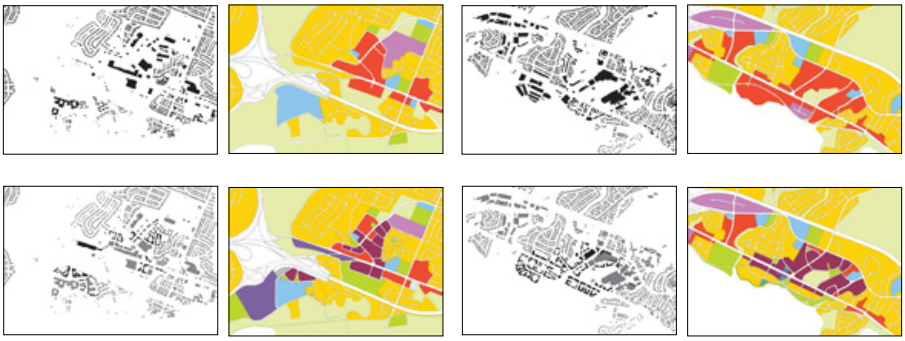
Community Invests in its Future through Transit System

DESCRIPTION Aiea-Pearl City Neighborhood TOD Plan is the third in a series of community-driven planning efforts in Honolulu for future station areas along the new elevated fixed guideway mass transit system. This TOD Plan consists of three station areas; Leeward Community College, Pearl Highlands and Pearlridge stations.

Leeward Community College is located just north of Pearl Harbor in-between Waipahu and Pearl City. A new mixed use village is created adjacent to campus with amenities for students and faculty. A campus identity is acheived with visibility of the campus from the station, as well as improved open space in the form of plazas and campus "quads". Pearl Highlands Station is closeby and will serve as a major park 'n ride and bus transfer location. A pedestrian bridge is proposed to carry pedestrians across Kamehameha Highway. New big boxes, such as Wal-Mart and Home Depot currently exist on the site. A best practices approach was taken to keep fairly new buildings and redevelop along the edges to allow for a mix of uses and a more vibrant streetscape. Pearlridge Station is located north of Pearl Harbor in between two major thoroughfares; Interstate H-1 and Kamehameha Highway. Currently, the Pearlridge Center, a 1.5 million square foot regional mall is located on-site. Recognizing the significance of this area as a regional retail destination, one alternative proposes to keep the existing mall and infill around its edges. Another one proposes to redevelop overtime, but replace the amount of retail to keep its identity as a retail center. The waterfront also plays a large role in this station area. Bringing the waterfront back to the people is very important to the community. In one alternative a small waterfront museum is proposed to engage people with the waterfront.

DESIGN FEATURES

- Pedestrian-scaled streets
- New bicycle and pedestrian connections
- Lively town center designs with a mix of uses and open space
- Engagement of Pearl Harbor and the waterfront
- Focus on saving and building around newly constructed buildings
- Various neighborhood parks within 1/8 mile of residents
- "Greening" existing drainage canals to make them more natural
- Transition to existing neighborhoods with use and scale
- Better connections to existing surrounding neighborhoods
- Celebrate existing cultural facilities, such as Sumida Farms



Client: City and County of Honolulu
Department of Planning and Permitting

Building size/acres: 307 Acres Total

Start Date: June 2009

Completion Date: December 2010

Contract Amount: $400,000

Contact:
City and County of Honolulu
Department of Planning & Permitting

Kathy Sokugawa
650 South King Street, 7th Floor
Honolulu, HI 96813
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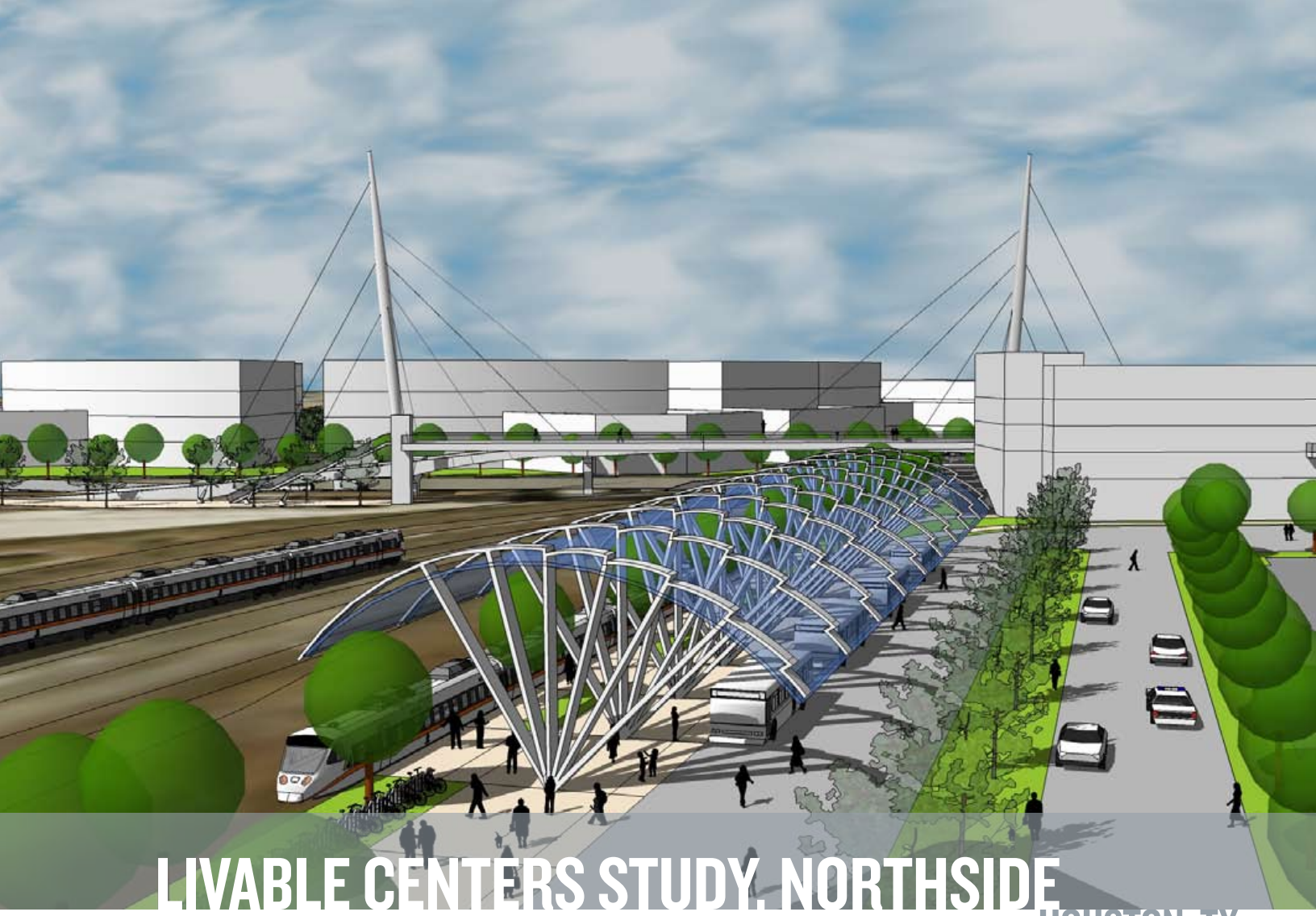


LIVABLE CENTERS STUDY: NORTHSIDE

HOUSTON, TX

Designing Attractive Areas Where People can Live, Work, & Play

DESCRIPTION The Northside neighborhood, north of Houston's downtown and connected through Main Street and the future San Jacinto Street, is easily accessible from I-45 and I-10, but cut off from downtown vacant industrial land. The study seeks to build off of previous planning efforts including the Northside Village Economic Revitalization Plan to provide a framework for future growth and improvements. Current residents could benefit greatly from new neighborhood services, retail, transit access and other amenities. The potential for infill development is great, and if done right can increase overall vibrancy without displacement while seeking to preserve the quality of life in adjacent lower density residential neighborhoods, minimizing the impacts of traffic and parking on local streets. The Study presents strategies to enhance the pedestrian realm and neighborhood connectivity of the future light rail stations.

VISION Maintain the low and moderate income single family residences while enabling critical redevelopment along the transit corridor.

DESIGN FEATURES

- Community outreach will ensure positive changes to transit for the neighborhood.
- Coordination w/ the Greater Northside Management District & community stakeholders to create a shared identity.

Livable Centers Program seeks to create neighborhoods that are:

- Compact and mixed use
- Designed to be walkable
- Connected and accessible

ILLUSTRATIONS

- Facing page:
  Draft Alternative, top detail
- This page right:
  Draft Alternative, partial
- This page below:
  Districts/Connections

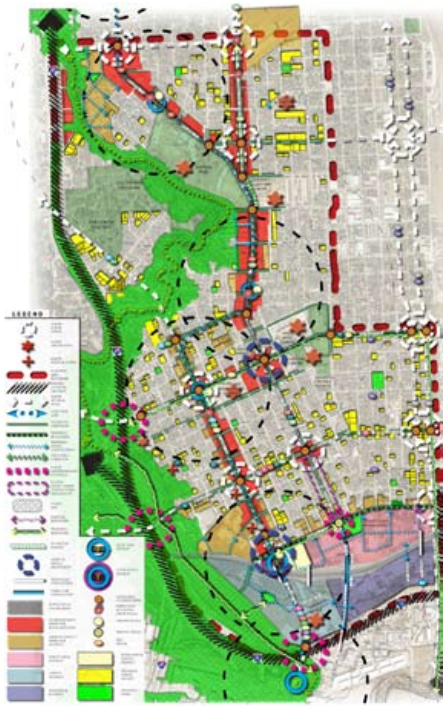
Client:
City of Houston
H-GAC

Study area size: 1,194 acres/ 1.8 sq miles

Start Date: October 2009

Completion: June 2010

Contact:
Meredith Dang, AICP
Land Use Transportation Coordinator
Houston-Galveston Area Council
713-993-2443
meredith.dang@h-gac.com



Executive Summary

The Plan provides a vision for:

- **Neighborhood improvements**
- **Urban development that takes advantage of transit**

A. The Vision

The people of Oahu are making an important investment in their future by funding a fixed guideway rail system connecting Waipahu with the City of Kapolei to the west and with the Primary Urban Center to the east. This system will provide a viable alternative to the private automobile while promoting the opportunity to create new compact walkable districts and improving existing neighborhoods through infill development. In order to capitalize on this tremendous opportunity and financial investment, development around future rail transit stations needs to be focused, balanced and well-planned.

The Waipahu Neighborhood Transit-Oriented Development (TOD) Plan is the first in a series of focused community-based planning efforts led by the Honolulu Department of Planning and Permitting for future station areas along the trail ransit line. The Plan focuses on the areas within 1/2 mile and 1/4 mile of the proposed transit stations and is intended to provide a vision for neighborhood improvements and future urban redevelopment adjacent to the Farrington / Leoku and Farrington / Mokuola transit stations (also known as West Loch Station and Waipahu Transit Center Station, respectively). It is the goal of the Plan to foster more livable communities that take advantage of the benefits of transit; specifically, reducing transportation costs for residents, businesses and workers while improving mobility and circulation in the station areas for all modes of travel. While taking advantage of more efficient use of land, TOD can provide more walkable, healthier, economically vibrant neighborhoods, safe bicycling environments, convenient access to daily household needs and enhancement of local character.

Transit Plaza at Farrington / Mokuola Station

Festival Market Place Plaza and Daylit Stream

B. Summary of Recommendations

1. Farrington / Mokuola

- Add transit plazas and pedestrian improvements on Farrington Highway
- Encourage the revitalization of the "Old Town" area
- Encourage the restoration of Kapakahi Stream with a stream walk to Pouhala Marsh and Pearl Harbor Historic Trail
- Encourage the day-lighting of Kapakahi Stream and the creation of a Festival Market Place Plaza, connecting to Hawaii's Plantation Village
- Add neighborhood mini parks and new open spaces adjacent to infill development
- Add infill multi-family housing throughout the station area
- Encourage infill mixed use and retail along Waipahu Depot Road, Farrington Highway and Waipahu Street
- Encourage the consolidation of parking and the identification of short-term commuter parking areas

2. Farrington / Leoku

- Add transit plazas and pedestrian improvements on Farrington Highway
- Encourage a "main street" along Leoole Street with mixed-use development connecting station and Pearl Harbor
- Encourage infill mixed use and retail development along Farrington Highway
- Encourage a gateway office development at Fort Weaver Road and Farrington Highway
- Add live/work buildings makai of Farrington Highway
- Add infill multi-family housing throughout station area
- Encourage the redevelopment of affordable housing makai of Farrington Highway
- Encourage the restoration of the drainage canal between Leokane and Leoleo Streets as a natural greenway
- Add neighborhood mini parks and open space adjacent to infill development
- Encourage the consolidation of parking and the identification of short-term commuter parking

Leoole "Main Street" Mixed-Use Environment

Neighborhood Mini Park and Live/Work Buildings

The Recommendations were developed through a community process that included:

- **Advisory Committee meetings**
- **Community Workshops**
- **A property owner and business owner open house**

F. Inter-Modal Transportation Network

The new transit stations are part of a larger inter-modal transportation network that should be created in the surrounding neighborhoods. New streets, paths and trails should be developed in order to accommodate pedestrians, bicyclists, kiss and ride drop-offs, buses, and local through traffic.

There is a need for identifying and developing pedestrian ways and bikeways to connect the existing residential areas with the proposed stations. Bike paths need to be clearly defined and separated bikeways developed to increase usage and safety along major streets and corridors. The shoreline bike path needs to be integrated with other mauka areas of Waipahu and the station locations.

For Waipahu residents, transportation benefits of the transit system will include:

- Better access to jobs in communities along the transit line.
- Faster rush-hour commutes.
- Increased mobility for residents who may not drive or have access to a vehicle.
- Reduced expenditures on transportation for families who can reduce vehicle ownership and/or use.
- Reduced energy consumption for transportation.

Plan Principles - Celebrate Waipahu

- **Station areas currently have limited connectivity to surrounding neighborhoods**
- **New streets, paths and trails should be developed**

The Existing Bus Transfer Area on Hikimoe Street


The Station Areas Will Have a Variety of Transportation Options

10. Parking Requirements

The Plan recommends reduction in the required number of off-street parking spaces in order to reflect the lower auto ownership in transit-oriented districts, as well as the destructive impact on urban quality from tremendous amounts of poorly placed surface parking. The parking requirement should also be reduced to encourage transit ridership, lessen urban runoff, reduce the cost of development and make more efficient use of the land.

Reducing required parking also helps to promote the Plan principle of Providing Mixed-Income Housing in the station areas. Reduced parking can lower overall construction costs, which in turn can result in improved financial performance of projects, more affordable housing, and promote higher intensity development.

Recommended parking requirements in the TOD Precincts are consistent with parking requirements in the existing BMX-4 central business mixed-use district.

Recommended parking requirements in the TOD and TIZ Precincts are based on type of use. Requirements for housing, office and retail uses are lowered, while those for industrial remain consistent with existing standards.

Required parking in the TOD Precincts:

Use	Parking Requirement
Multi-Family Dwellings	1 per unit
Auditoriums	1 per 300 sf
Business Services	1 per 500 sf
Eating and Drinking Establishments	1 per 300 sf of dining area over 1,500 sf plus 1 per 400 sf of kitchen and other areas
Financial Institutions	1 per 600 sf over 4,000 sf
Hotels	1 per 4 units
Medical Clinics	1 per 600 sf over 4,000 sf
Medical Laboratories	1 per 600 sf over 4,000 sf
Meeting Facilities	1 per 300 sf
Offices, Other	1 per 600 sf over 4,000 sf
Personal Services	1 per 600 sf over 4,000 sf
Retail, Other	1 per 600 sf over 4,000 sf
Sales	1 per 1,200 sf

- **Parking requirements should be reduced in both the TOD and TIZ Precincts**
- **TOD Precinct requirements are consistent with BMX-4 zone**